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Bibliography of School Buildings, Grounds, and Equipment

Part II

By

HENRY LESTER SMITH

and

FOREST RUBY NOFFSINGER

Bureau of Coöperative Research, Indiana University
School of Education

HENRY LESTER SMITH, Director

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Wilson Education Index

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INDIANA UNIVERSITY

Foreword

In January, 1928, the Bureau of Coöperative Research published (as Vol. 4, No. 3, of the Bulletin of the School of Education, Indiana University) a comprehensive Bibliography of School Buildings, Grounds, and Equipment, under the authorship of Henry Lester Smith and Leo M. Chamberlain. This bibliography, which included only references previous to October, 1927, has been continued to include references from October, 1927, to April, 1932. However, the extent of the work has been such that it was thought necessary to publish the additional references in two bulletins—the first (Vol. 9, No. 2, of the Bulletin of the School of Education, Indiana University) containing references falling in the fields covered by the first eleven main divisions of the original bibliography, and the second (Vol. 9, No. 3) containing references in the fields covered by the last eleven main divisions. The three bulletins are to be known as Parts I, II, and III of "A Bibliography of School Buildings, Grounds, and Equipment," the original study being Part I and the present study being Parts II and III. The three parts should be used together, as there is no overlapping of references.

As was indicated with respect to the former bulletin, this publication is in no sense presented as an exhaustive bibliography on school buildings, grounds, and equipment. The sources in this field are practically unlimited and are increasing with each month's publications. It is almost inconceivable that any single institution should have available all the various books, periodicals, and bulletins providing information in the field. In an attempt to make the bibliography as complete as possible, a number of references have been compiled from such sources as the *Education Index* and the Office of Education publications and included in the bibliography, even tho the original references were not available either for checking or annotation. The possibility of inaccuracies thru this practice was thought to be overbalanced by the increased usefulness of the bibliography because of the inclusion of references which otherwise would have been omitted.

In collecting the references published during the period covered by this bibliography, a large number of earlier articles not published in the former bulletin were discovered. To these references were added about nine hundred references dated before 1927 which were taken from a typewritten bibliography lent to the authors by Dr. N. L. Engelhardt, Teachers College, Columbia University. These earlier references (about 2,000 in number) are on file at the Bureau of Coöperative Research, School of Education, Indiana University. This card file bibliography, together with the three published bulletins of the School of Education on the subject, is thought to be the most comprehensive bibliography on school buildings, grounds, and equipment in existence.

In any publication containing so many references there are certain to be some errors. The authors will greatly appreciate the coöperation of those who use this bibliography in reporting whatever mistakes and inaccuracies are discovered.

Acknowledgment is here made for the help provided by others in the collecting, annotating, and editing of the material included in this study. Of special value has been the assistance of several graduate students in locating references on specific building units. The authors wish to commend the library staff of Indiana University for their helpful coöperation in locating and making available the materials needed in the conduct of the study. To Miss Kathleen Dugdale, stenographer in charge of publications, and her able assistant, Miss Mary Carroll, should be given credit for much of the checking and editing of this publication.

HENRY LESTER SMITH.
FOREST R. NOFFSINGER.

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Introduction

RELATION TO FORMER BIBLIOGRAPHY

THIS bibliography is published in three parts. The Smith-Chamberlain bibliography is to be known as Part I. Part II (Vol. 9, No. 2) includes the following major divisions as listed in the Table of Contents of Part I: I, General References; II, Historical Development and Modern Characteristics of American School Architecture; III, Architectural Styles and Building Types; IV, The Building Shortage and the Status of Building Operations; V, Preliminary Considerations and the Development of the Building Program; VI, Individual Relationships and Responsibilities; VII, School Codes and Other Legal Provisions Affecting the Building Program; VIII, Building Materials, Specifications, and Structural Design; IX, Acoustics; X, The School Grounds; and XI, Space Provisions and their Layout and Equipment. Part III (Vol. 9, No. 3) includes the following major divisions: XII, Mechanical Equipment; XIII, Interior Decoration; XIV, Standardization of School Buildings and Equipment; XV, Remodeled Buildings and Additions; XVI, The Maintenance of Buildings and Equipment; XVII, Insurance and Depreciation; XVIII, The Teacher's Home; XIX, Open-Air Schools; XX, The Portable Schoolhouse; XXI, Schoolhouses of Other Countries; and XXII, Plans, Illustrations, and Descriptions of Existing, Proposed, and Model School Buildings, Classified by States.

Because of recent developments in certain phases of the planning and construction of school buildings, a number of new sub-divisions have been added to the original Table of Contents of Part I.

The numbering of references begins with No. 2264 (the last number used in Part I being No. 2263) and continues consecutively thru Part II and Part III. The two parts of the new bibliography are organized to be used as a single unit; and the cross-indexes and index of authors include references in all three publications.

SCOPE OF THE BIBLIOGRAPHY

1. References included in Part I cover material in the field previous to October, 1927; those in Part II and Part III are limited to the period beginning October 1, 1927, and ending April 1, 1932.

2. School surveys not included in reference No. 2442, *Bibliography of School Surveys and of References on School Surveys*, by Henry Lester Smith and Edgar Alvin O'Dell (Vol. 8, Nos. 1 and 2, of the Bulletin of the School of Education, Indiana University) have been included in this bibliography when the date of publication fell within the period covered by this study.

3. Advertising material has been given a place when considered to be of general significance.

4. References dealing with private educational institutions of the elementary and secondary level are included in this bibliography. References dealing with institutions of higher learning have been excluded except where such references deal also with elementary or secondary school provisions or where there is possible an application of principles or practices to elementary or secondary school buildings. It is planned to publish, in the near future, a bibliography of references on buildings for institutions of higher learning.

5. Publications of city boards of education, state departments of education, and schoolhousing bureaus have been included when available, even tho their nature was considered such as to make them of local rather than general importance.

ORGANIZATION

All references have been placed within the classification developed in Part I with the exception of a few newly developed sub-topics. The decision as to the proper classification of a particular reference was in many cases very difficult to make. In all such cases the reference was originally listed under the topic receiving the greatest emphasis in the reference and given secondary reference in the cross-index of all other topics treated in the reference. The following statements will be of assistance to the user of this bibliography:

1. All references are numbered consecutively thruout Parts I, II, and III without regard for the divisions of the bibliography.

2. In so far as possible, duplications have been avoided. Each reference should appear once and once only. Any single number stands for one and the same reference in all three bulletins.

3. Wherever the same material or practically the same material was found to have been published in two or more periodicals, bulletins, or other publications, the reference is listed but once and notation is made of the various publications of the same material.

4. Where there was found a series of articles having the same or slightly different titles by the same author, the entire series is included under a single reference number.

5. References of a general nature are classified under one of the twenty-two major headings, and all others appear under the minor divisions for which they seemed to have most significance.

6. A few of the more significant references in each division have been marked with an asterisk.

7. Within each division the references have been arranged alphabetically according to author. Where the author is not indicated, the reference is assigned to the magazine in which it appears. Where more than one reference by the same author is found under any division, the references are arranged in chronological order.

8. At the close of each division appears a series of cross-index numbers. These numbers refer the reader to references on the same subject which are listed in other divisions of the three bulletins which make up the complete bibliography. This device aids the student in locating all the material pertaining to the subject under investigation.

9. Bibliographical data for magazine articles appear in the following order:

Author (or magazine), name of article, magazine, volume number, pages, month, day of month (if used), and year.

10. Bibliographical data for books appear in the following order:

Author, title of book, publisher, place of publication, date of publication. Where a section of a book is considered alone, the title of this section follows the name of the author and precedes the title of the book.

11. Bulletins, reports, and like material have been made to conform as closely as possible to this system. Uniformity has been attempted thruout.

12. At the close of Part II and of Part III appears an alphabetical list of authors of all references listed in Parts I, II, and III of the bibliography.

13. Abbreviations employed in Parts II and III are explained in the following section of this bulletin. Abbreviations used in Part I are explained in that bulletin.

14. The authors take no responsibility for references lacking annotations. Such references were not available and the task of checking and annotating them seemed to be too great to justify the required time and money expense.

15. References in Division XXII in Part III have been listed alphabetically by states with the idea of providing a source for the study of plans and illustrations of buildings typical of particular sections of the country or of enabling the reader to locate the description of a particular school building. In some cases the description of a particular building seemed to provide important information on some building unit or other sub-division. Under such circumstances the reference was originally listed under the appropriate topic and given a cross-index reference under the proper state.

SUGGESTIONS FOR USING THE BIBLIOGRAPHY

1. The student interested in school buildings should have access to all three parts of the bibliography. Part I lists the important references previous to October 1, 1927. Parts II and III list the references from that date to April 1, 1932.

2. The reader interested in a survey of the whole field should select for study the references that are marked with an asterisk in Division I of Part I and in Division I of Part II.

3. The individual interested in a particular subject, but whose time is limited, should consult those references under the proper division in each bibliography which are marked with an asterisk, and as many additional ones as he deems desirable.

4. For a thoro study of a particular division or sub-division of the work, the reader should consult all references listed under the proper heading in both bibliographies and, in addition, all the cross-index references under the division or sub-division.

5. Where the reader is interested in a minor detail which has not been given a place in the Table of Contents, he should determine the division in the Table of Contents under which the topic logically falls and select thru the title of the reference on the annotation those references for further investigation which promise treatment of the chosen topic. No topic index other than the Table of Contents has been included because the task of compiling such an index, adequate for student use, was considered not within the scope of the present study.

List of Abbreviations Used

ABBREVIATIONS AND PUBLISHERS OF PERIODICALS

Aerologist. The Aerologist Publishing Co., 64 W. Randolph St., Chicago.

Am Arch—American Architect. Architectural and Building Press, Inc., 239 W. Thirty-Ninth St., New York City.

Am Childh—American Childhood. Milton Bradley Co., Springfield, Mass.

Am City—American City. Civic Press, 443 Fourth Ave., New York City.

Am Educ Digest—American Educational Digest. (See School Executives Magazine.)

Am Inst Arch J—Journal of the American Institute of Architects. Press of the American Institute of Architects, Inc., Fisk Bldg., 250 W. Fifty-Seventh St., New York City.

Am J Hygiene—American Journal of Hygiene. School of Hygiene and Public Health, Lancaster, Pa.

Am J Pub Health—American Journal of Public Health. (Incorporated Nation's Health in 1928.) American Public Health Association, 374 Broadway, Albany, N.Y.

Am J Sociology—American Journal of Sociology. University of Chicago Press, 5750 Ellis Ave., Chicago.

Am Medical Assn J—Journal of the American Medical Association. American Medical Association, 535 N. Dearborn St., Chicago.

Am Mercury—American Mercury. American Mercury, Inc., 730 Fifth Ave., New York City.

Am Phys Educ R—American Physical Education Review. American Physical Education Association, Box 123, Highland Station, Springfield, Mass.

Am Sch and Univ—The American School and University. American School Publishing Corp., 443 Fourth Ave., New York City.

Am Sch Bd J—American School Board Journal. Bruce Publishing Co., 354 Milwaukee St., Milwaukee, Wis.

Am Soc Heat V E J—Journal of the American Society of Heating and Ventilating Engineers. (See Heating, Piping, and Air Conditioning.)

Arch—Architecture. Charles Scribner's Sons, 597 Fifth Ave., New York City.

Arch Forum—Architectural Forum. Rogers and Manson Co., 383 Madison Ave., New York City.

Arch R—Architectural Review. The Architectural Press, 9 Queen Anne's Gate, Westminster, England.

Arch Rec—Architectural Record. F. W. Dodge Corp., 119 W. Fortieth St., New York City.

Athletic J—The Athletic Journal. Athletic Journal Publishing Co., 6858 Glenwood Ave., Chicago.

Balance Sheet—The Balance Sheet. Southwestern Publishing Co., Cincinnati, Ohio.

Baltimore Bul Educ—Baltimore Bulletin of Education. Bureau of Research, Carrollton and Lafayette Aves., Baltimore, Md.

Bathhouse and Beach Management.

Beach and Pool. (See Beach and Pool and Aquatics.)

Beach and Pool and Aquatics. (Known as Beach and Pool previous to February, 1931.) Chicago.

Bldg Age—Building Age and National Builder. Building Age Publishing Corp., 243 W. Thirty-Ninth St., New York City.

Boston Soc of Civil Eng J—Journal of the Boston Society of Civil Engineers. Boston.

Bruce's Sch Shop Annual—Bruce's School Shop Annual. (Known as Bruce's Specification Annual in 1928 and 1929.) Bruce Publishing Co., Milwaukee, Wis.

Bul H Points—Bulletin of High Points in the Work of the High Schools of New York City. Board of Education, Office of Publication, Room 821, Hall of the Board of Education, 500 Park Ave., New York City.

Bul of Dept of Classroom Teach of the N.E.A.—Bulletin of the Department of Classroom Teachers of the National Education Association. National Education Association, 1201 Sixteenth St., N.W., Washington, D.C.

Bul of Dept of El Sch Prin of the N.E.A.—Bulletin of the Department of Elementary School Principals of the National Education Association. National Education Association, 1201 Sixteenth St., N.W., Washington, D.C.

Bul of Dept of Sec-Sch Prin of the N.E.A.—Bulletin of the Department of Secondary-School Principals of the National Education Association. National Education Association, 3129 Wenonah Ave., Berwyn, Ill.

Bul of Dept of Supt of the N.E.A.—Bulletin of the Department of Superintendence of the National Education Association. National Education Association, 1201 Sixteenth St., N.W., Washington, D.C.

Bul of the Stout Inst—Bulletin of the Stout Institute. Stout Institute, Menomonie, Wis.

Calif Q Sec Educ—California Quarterly of Secondary Education. The California Society for the Study of Secondary Education, 2163 Center St., Berkeley, Calif.

Catholic Sch J—Catholic School Journal. Milwaukee, Wis.

Chicago Prin Club Bul—Bulletin of the Chicago Principals' Club. Chicago.

Chicago Sch J—Chicago Schools Journal. Chicago Normal College, 6800 Stewart Ave., Chicago.

Childh Educ—Childhood Education. Association for Childhood Education, 1201 Sixteenth St., N.W., Washington, D.C.

Col and Ref Library Yearbook—College and Reference Library Yearbook. American Library Association, 78 E. Washington St., Chicago.

Conn Sch—Connecticut Schools. Hartford, Conn.

Domestic Eng—Domestic Engineering. Engineering Publications, Inc., 1900 Prairie Ave., Chicago.

Drama—Drama Magazine. Drama Corp., 15 W. Forty-Fourth St., New York City.

Educ Adm and Sup—Educational Administration and Supervision. Warwick and York, York, Pa.

Educ Bul—Education Bulletin. State of New Jersey, Department of Public Instruction, Trenton, N.J.

Educ Meth—Educational Method. Department of Supervisors and Directors of Instruction, National Education Association, 525 W. One Hundred Twentieth St., New York City.

Educ News—Educational News. State Department of Education, Charleston, W.Va.

Educ R—Educational Review. (See School and Society.)

Educ Res Bul—Educational Research Bulletin. College of Education, Ohio State University, Columbus, Ohio.

Educ Res Rec—Educational Research Record. Extension Division, University of Nebraska, Lincoln, Neb.

Elec R—Electrical Review. London, England.

Electrician. Benn Bros., Ltd., Bouverie House, 154 Fleet St., E.C.4, London, England.

El Sch J—Elementary School Journal. Department of Education, University of Chicago, Chicago.

Eng and Contr—Engineering and Contracting. Gillette Publishing Co., 801 Atwell Bldg., 221 E. Twentieth St., Chicago.

English J—English Journal. University of Chicago Press, 5750 Ellis Ave., Chicago.

Gas Age-Rec—Gas Age-Record. Robbins Publishing Co., Inc., 9 E. Thirty-Eighth St., New York City.

Gas J—Gas Journal. London, England.

Gen Sci Q—General Science Quarterly. W. S. Whitman, Salem, Mass.

Grade Teach—Grade Teacher. (Known as Primary Education-Popular Educator previous to February, 1929.) Boston, Mass.

Heat and Piping Contr Nat Assn Official Bul—Heating and Piping Contractors National Association Official Bulletin. Heating and Piping Contractors National Association, 50 Union Square, E., New York City.

Heat and Ven—Heating and Ventilating Magazine. Heating and Ventilating Magazine Co., 1123 Broadway, New York City.

Heat, Piping and Air Cond—Heating, Piping and Air Conditioning. (Known as Journal of the American Society of Heating and Ventilating Engineers previous to May, 1929.) Engineering Publications, Inc., 1900 Prairie Ave., Chicago.

Historical Outlook. McKinley Publishing Co., 1021 Filbert St., Philadelphia, Pa.

Home Econ News—Home Economics News. Manual Arts Press, 237 N. Monroe St., Peoria, Ill.

H Sch—High School. School of Education, University of Oregon, Eugene, Ore.

H Sch J—High School Journal. University School of Education, Chapel Hill, N.C.

H Sch Q—High School Quarterly. University of Georgia, Athens, Ga.

H Sch Teach—The High School Teacher. The High School Teacher Co., Publication Office, Wright and Main Sts., Blanchester, Ohio.

Hygeia. American Medical Association, 535 N. Dearborn St., Chicago.

Illum Eng—Illuminating Engineer. Illuminating Engineer Publishing Co., London, England.

Illum Eng Soc—Transactions of the Illuminating Engineering Society. Illuminating Engineering Society, 29 W. Thirty-Ninth St., New York City.

Ind Arts and Voc Educ—Industrial Arts and Vocational Education. (Known as Industrial Arts Magazine previous to June, 1930.) Bruce Publishing Co., Milwaukee, Wis.

Ind Arts M—Industrial Arts Magazine. (See Industrial Arts and Vocational Education.)

Ind Educ M—Industrial Education Magazine. Manual Arts Press, 237 N. Monroe St., Peoria, Ill.

Indiana State Bd of Health Monthly Bul—Monthly Bulletin of the Indiana State Board of Health. Indiana State Board of Health, Indianapolis, Ind.

Indiana Teach—The Indiana Teacher. Indiana State Teachers' Association, 205 Hotel Lincoln, Indianapolis, Ind.

J Am Assn Hygiene and Baths—Journal of the American Association of Hygiene and Baths. New York City.

J Bus Educ—Journal of Business Education. Haire Publishing Co., 1170 Broadway, New York City.

J Chem Educ—Journal of Chemical Education. Division of Chemical Education of the American Chemical Society, Easton, Pa.

J Com Educ—The Journal of Commercial Education. The Stenographic-World Publishing Co., 44 N. Fourth St., Philadelphia, Pa.

J Educ—Journal of Education. New England Publishing Co., 6 Beacon St., Boston, Mass.

J Educ (London)—The Journal of Education and School World. William Rice, 3 Ludgate Broadway, E.C.4, London, England.

J Educ Res—Journal of Educational Research. Public School Publishing Co., Bloomington, Ill.

J Health and Phys Educ—Journal of Health and Physical Education. American Physical Education Association, Box 362, Ann Arbor, Mich.

J Home Econ—Journal of Home Economics. American Home Economics Association, 101 E. Twentieth St., Baltimore, Md.

Jr Col J—Junior College Journal. Stanford University Press, Stanford University, Calif.

Jr-Sr H Sch Clearing House—Junior-Senior High School Clearing House. Inor Publishing Co., 32 Washington Place, New York City.

Kans Teach—Kansas Teacher and Western School Journal. Kansas State Teachers Association, 315 W. Tenth St., Topeka, Kans.

Libraries. 216 W. Monroe St., Chicago.

Library J—The Library Journal. Publication Office, 62 W. Forty-Fifth St., New York City.

Library Occurrent. Library Division of the Indiana Library and Historical Department, Indianapolis, Ind.

Manufacturers Rec—Manufacturers Record. Manufacturers Record Publishing Co., Manufacturers Record Bldg., Commerce and Water Sts., Baltimore, Md.

Mich Arch and Eng—The Michigan Architect and Engineer. Detroit, Mich.

Mich Educ J—Michigan Education Journal and Moderator Topics. Michigan Education Association, Washington Ave., Lansing, Mich.

Midland Sch—Midland Schools. Official Publication of the Iowa State Teachers' Association, 504 Youngerman Bldg., Des Moines, Ia.

Milbank Memorial Fund Q Bul—The Milbank Memorial Fund Quarterly Bulletin. Milbank Memorial Fund, 49 Wall St., New York City.

Mind and Body. Mind and Body Publishing Co., New Ulm, Minn.

Minn J Educ—Minnesota Journal of Education. Minnesota Education Association, 2642 University Ave., St. Paul, Minn.

Modern Educ—Modern Education and Individual Instruction. Cleveland, Ohio.

Modern Pub Bldgs—Modern Public Buildings. Bruce Publishing Co., Milwaukee, Wis.

Nat Assn of Deans of Women—Proceedings of the National Association of Deans of Women. Department of Superintendence, National Education Association. Headquarters secretary: 1634 Eye St., N.W., Washington, D.C.

Nat Assn Pub Sch Bus Officials—Proceedings of the National Association of Public School Business Officials. John S. Mount, secretary, State House, Trenton, N.J.

Nat Council on Schoolhouse Construction—National Council on Schoolhouse Construction. Secretary's Office, Milwaukee, Wis.

Nat Educ Assn—National Education Association: Proceedings and Addresses. National Education Association, 1201 Sixteenth St., N.W., Washington, D.C.

Nat Educ Assn J—Journal of the National Education Association. National Education Association, 1201 Sixteenth St., N.W., Washington, D.C.

Nation's Sch—Nation's Schools. The Nation's Schools Publishing Co., Chicago.

Nat Municipal R—National Municipal Review. National Municipal League, 261 Broadway, New York City.

Nat Soc for Study of Educ—National Society for the Study of Education, Yearbooks. Guy M. Whipple, secretary, 10 Putnam St., Danvers, Mass.

Nature M—Nature Magazine. American Nature Association, Washington, D.C.

Neb Educ J—Nebraska Educational Journal. Nebraska State Teachers' Association, 511 Richards Block, Lincoln, Neb.

New England Assn of Chem Teach—New England Association of Chemical Teachers.

Norm Instr and Prim Plans—Normal Instructor and Primary Plans. (See The Instructor.)

N Y State Educ—New York State Education. New York State Education, 617 N. Goodman St., Rochester, N.Y.

Office Appliances. Office Appliance Co., 417 S. Dearborn St., Chicago.

Ohio State Educ Conf—Ohio State Educational Conference. Ohio State University, Columbus, Ohio.

Parents' M—The Parents' Magazine. Parents' Publishing Association, 255 Fourth Ave., New York City.

Parks and Recreation. American Institute of Park Executives, East St. Louis, Ill.

Pa Sch J—The Pennsylvania School Journal. The Pennsylvania State Education Association, 400 N. Third St., Harrisburg, Pa.

Peabody J Educ—Peabody Journal of Education. The Faculty of the George Peabody College for Teachers, Nashville, Tenn.

Pencil Points—Stamford, Conn.

Pentathlon—The Pentathlon. Middle West Society of Physical Education, Ann Arbor, Mich.

Permaflector Lighting. Pittsburgh Reflector Co., Pittsburgh, Pa.

Pittsburgh Sch—Pittsburgh Schools. Pittsburgh Teachers' Association, Pittsburgh, Pa.

Platoon Sch—Platoon School. National Association for the Study of the Platoon or Work-Study-Play School Organization, 1210 D St., N.W., Washington, D.C.

Playground—The Playground. (See Recreation.)

Playground and Recreation. (See Recreation.)

Plumbers and Heat Contr Trade J—The Plumbers and Heating Contractors Trade Journal. (See Plumbing and Heating Contractors Trade Journal.)

Plumbing and Heat Contr Trade J—Plumbing and Heating Contractors Trade Journal. (Known as The Plumbers and Heating Contractors Trade Journal from July 1, 1927, to October 15, 1931.) Plumbers Trade Journal Publishing Co., 515 Madison Ave., New York City.

Power Plant Eng—Power Plant Engineering. Technical Publishing Co., 53 W. Jackson Blvd., Chicago.

Prac Home Econ—Practical Home Economics. (Known as The Home Economist previous to February, 1929; known as The Home Economist and American Food Journal from March, 1929, to December, 1929.) Lakeside Publishing Co., 468 Fourth Ave., New York City.

Progressive Educ—Progressive Education. Progressive Education Association. Williams and Wilkins Co., Mt. Royal and Guilford Aves., Baltimore, Md.

Pub Health Report—Public Health Reports. United States Treasury Department, Public Health Service, Government Printing Office, Washington, D.C.

Publ of the Am Statistical Assn—Publications of the American Statistical Association. Rumford Press Bldg., Concord, N.H.

Q J Speech—Quarterly Journal of Speech. National Association of Teachers of Speech, University of Wisconsin, Madison, Wis.

Recreation. (Known as The Playground previous to June, 1929; known as Playground and Recreation from June, 1929, to January, 1931.) National Recreation Association, 315 Fourth Ave., New York City.

Res Q Am Phys Educ Assn—Research Quarterly of the American Physical Education Association. American Physical Education Association, Box 362, Ann Arbor, Mich.

Rural Sch Bd M—Rural School Board Magazine. (Ceased publication, 1928.) Cleveland, Ohio.

Sanitary and Heat Age—Sanitary and Heating Age. (Known as Sanitary and Heating Engineering previous to June 15, 1929.) Sanitary and Heating Publishing Corp., 239 W. Thirty-Ninth St., New York City.

Sanitary and Heat Eng—Sanitary and Heating Engineering. (See Sanitary and Heating Age.)

Sch—School. The School News Co., 156 Fifth Ave. and Twentieth St., New York City.

Sch and Community—School and Community. Missouri State Teachers Association, Columbia, Mo.

Sch and Home—School and Home. New York City.

Sch and Soc—School and Society. (Took over Educational Review in October, 1928.) Science Press, Garrison, N.Y.

Sch Arts M—School Arts Magazine. Worcester, Mass.

Sch Executives M—School Executives Magazine. (Known as American Educational Digest previous to January, 1929.) The School Executives Magazine Co., 1126-8 Q St., Lincoln, Neb.

Sch Feeding Management—School Feeding Management. Management Magazines, Inc., 913 Merchandise Mart, Chicago.

Sch Library Yearbook—School Library Yearbook. American Library Association, 78 E. Washington St., Chicago.

Sch Life—School Life. Superintendent of Documents, Government Printing Office, Washington, D.C.

Sch M—The School Magazine. Department of Public Instruction, Buffalo, N.Y.

Sch Management—School Management. School Management, Inc., 114 E. Thirty-Second St., New York City.

Sch of Educ Rec—School of Education Record. University of North Dakota, Grand Forks, N.D.

Sch R—School Review. Department of Education, University of Chicago, Chicago.

Sch Sci and Math—School Science and Mathematics. School Science and Mathematics, Publications Office, 404 Wesley Ave., Mount Morris, Ill.

Sci Am—Scientific American. Scientific American Publishing Co., 24-6 W. Fortieth St., New York City.

Sci Educ—Science Education. W. G. Whitman, 350 Lafayette St., Salem, Mass.

Sheet Metal Worker. Edwin A. Scott Publishing Co., Inc., 45 W. Forty-Fifth St., New York City.

Sierra Educ News—Sierra Educational News. California Teachers Association, 508 Sheldon Bldg., 461 Market St., San Francisco, Calif.

Sight-Saving R—The Sight-Saving Review. National Society for the Prevention of Blindness, 370 Seventh Ave., New York City.

Spec—Spectator. 13 York St., Convent Garden, London, England.

Successful Farming. Des Moines, Iowa.

Survey. Survey Associates, 112 E. Nineteenth St., New York City.

Teach Col J—Teachers College Journal. Division of Research, Indiana State Teachers College, Terre Haute, Ind.

Teach Col Rec—Teachers College Record. Teachers College, Columbia University, 525 W. One Hundred Twentieth St., New York City.

Tex Outlook—The Texas Outlook. Texas State Teachers' Association, 708 Anderson Bldg., Seventh and Lamar Sts., Fort Worth, Tex.

Theatre Arts Monthly. Theatre Arts, Inc., 119 W. Fifty-Seventh St., New York City.

Theatre M—Theatre Magazine. Theatre Magazine Co., 22 W. Forty-Eighth St., New York City.

The Forecast—The Forecast, America's Leading Food Magazine. The Forecast Publishing Co., 140 N. Sixth St., Philadelphia, Pa.

The Home Econ—The Home Economist. (See Practical Home Economics.)

The Instructor. (Known as Normal Instructor and Primary Plans previous to 1931.) F. A. Owen Publishing Co., Dansville, N.Y.

Univ H Sch J—University High School Journal. Oakland, Calif.

Univ of Kans Bul of Educ—University of Kansas Bulletin of Education. Bureau of School Service and Research, University of Kansas, Lawrence, Kans.

Univ of Pittsburgh Sch of Educ J—University of Pittsburgh School of Education Journal. University of Pittsburgh, Pittsburgh, Pa.

U.S. Bur Educ Bul—United States Bureau of Education Bulletins. Government Printing Office, Washington, D.C.

U.S. Office Educ Bul—United States Office of Education Bulletins. Government Printing Office, Washington, D.C.

U.S. Pub Health Service, Pub Health Bul—United States Public Health Service, Public Health Bulletins. United States Treasury Department, Surgeon General, Government Printing Office, Washington, D.C.

Va J of Educ—Virginia Journal of Education. Richmond, Va.

Volta R—Volta Review. Philadelphia, Pa.

Western J Educ—Western Journal of Education. 609 Mission St., San Francisco, Calif.

Wilson Bul—Wilson Bulletin for Librarians. H. W. Wilson Co., 950-72 University Ave., New York City.

Wis J Educ—Wisconsin Journal of Education. Wisconsin Journal of Education, 716 Beaver Bldg., Madison, Wis.

Wis Library Bul—Wisconsin Library Bulletin. Wisconsin Free Library Commission, Madison, Wis.

Woman's J—Woman's Journal. Woman's Citizen Corp., 171 Madison Ave., New York City.

admin—administration
(adv)—advertising section
Ag—August
agri—agriculture or agricultural
Am—American
Ap—April
assn—association
bd—board
bds—boards
bibliog—bibliography
bldg—building
Bros.—Brothers
bul—bulletin or bulletins
bur—bureau
Ch.—chapter
Co.—company
col—college
comp.—compiler
contr—contributions
cu.—cubic
D—December
dept—department
diag—diagram or diagrams
div—division
econ—economics
(ed)—editorial
ed.—editor; eds.—editors
ed—edition
educ—education or educational
el—elementary
ext—extension
F—February
fig—figure or figures
fold—folder or folders
found—foundation
ft.—foot
h—high
il—illustration or illustrations
inc.—incorporated
inst—institute
instr—instruction
Ja—January
Je—June
Jl—July
jr—junior
Ltd.—limited
mim—mimeographed
Mr—March
ms—manuscript
My—May
N—November
nat—national
N.E.A.—National Education Association
no.—number
O—October
p.—page or pages
proc—proceedings
pt.—part
pub—public
publ—publications
ref—reference
res—research
rev—revised
S—September
sch—school or schools
sec—secondary
soc—society
supt—superintendence or superintendent
teach—teachers
transac—transactions
univ—university
U.S.—United States
voc—vocational
vol—volume
vs.—versus
Y.M.C.A.—Young Men's Christian Association
Y.W.C.A.—Young Women's Christian Association

I. General References

2264. *American School and University.* "Books and pamphlets issued by state departments of education with special reference to schoolbuilding planning and construction." *Am Sch and Univ* 1930-31:320

Lists significant reports on school buildings issued by a number of states.

2265. Byrne, Lee. *Bibliographies on building construction.* Columbia Univ, Teach Col, 1931. typ

These bibliographies, which include a bibliography on building material and construction, a bibliography on specifications, and a bibliography on certain aspects of school building, were a part of Byrne's Doctor's thesis, *Check List Materials for Public School Building Specifications* (ref. 2800), before it was printed, but were omitted in the printed copy.

2266. Draper, Edgar Marian and Roberts, Alexander C. "Grounds, buildings and equipment." In *Principles of American secondary education,* Ch. XV, p. 419-50. The Century Co., New York City, 1932

A general discussion of the important principles involved in the construction of high-school and junior-high-school buildings.

2267. *Dresslar, Fletcher B. and Pruett, Haskell. "Rural schoolhouses, school grounds and their equipment." *U. S. Office Educ Bul,* no. 21, 1930. plans, il, 74 p

A comprehensive general treatise on the small rural schoolhouse, with especial emphasis upon those points peculiar to rural buildings.

2268. Engelhardt, N. L. "Modern school buildings and their management." In *The classroom teacher,* vol. 1, p. 445-516. The Classroom Teacher, Inc., Chicago, 1927

Chapter I deals with planning the modern school, building measurement, typical classrooms, site, and landscaping. Chapter II deals with equipment and management, pupils' desks and seats, libraries, blackboards, rural school equipment, lighting, heating, ventilation, and good housekeeping.

2269. "Research on school building problems." *Am Sch and Univ* 1928-29:26-31

Suggests some of the school-building problems of today and summarizes a few of the recent studies of building problems.

2270. *Engelhardt, N. L. and Engelhardt, Fred. *Planning school building programs.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1930. 574 p

Discusses forecasting population and the part it plays in site selection and planning. A number of school-building standards are given. Building utilization is studied. Costs and publicity are among other things presented.

2271. *Harrison, Wallace Kirkman and Dobbin, C. E. *School buildings of today and tomorrow.* Architectural Book Publishing Co., Inc., New York City, 1931. 233 p

A rather complete work featuring the newest lay-outs for various specific units in elementary, junior high, and senior high schools well illustrated with photographs and floor plans. Contains a section on modern schools in foreign countries, another on the standardization of types, and another on the standardization of architect's details.

2272. Hill, Andrew P. "Functional school planning." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:110-40. mim

Discusses the following points: (1) the meaning of architecture, (2) building ability, (3) educational organization, (4) location of sites, (5) development of sites, (6) standards of main construction, (7) minor details, (8) standards of building lay-out, arrangement, and proportion, and (9) room standards. Includes a score card for rural school sites and one for grammar-school assembly halls.

2273. *Moehlman, Arthur B. *Public school plant programs.* Rand McNally and Co., Chicago, 1929. plans, il, 405 p

Deals with planning the school plant program from its inception thru all its steps to the final execution and appraisal. Many details of the subject are presented.

Pages 48 to 52 are published with slight expansion under the title of "Organizing to carry on the school plant program" in volume 6 of *Nation's Schools*, August, 1930, pages 58 to 63.

Pages 52 to 72 are published in condensed form under the title of "The community survey as a basis for school plant development" in volume 6 of *Nation's Schools*, September, 1930, pages 37 to 41.

Pages 73 to 90 are published with slight changes under the title of "Forecasting population growth" in volume 6 of *Nation's Schools*, October, 1930, pages 65 to 69.

Pages 90 to 95 are expanded and published under the title of "Developing the educational program to meet community needs" in volume 6 of *Nation's Schools*, November, 1930, pages 75 to 78.

Pages 97 to 110 are expanded and published under the title of "When, how, and by whom shall the architect be selected?" in volume 7 of *Nation's Schools*, February, 1931, pages 88, 90, 92, 94, and 96.

2274. Pierce, David H. "Some trends in school-building planning and construction." *Jr-Sr H Sch Clearing House* 4:203-7 D '29

A summary of recent practices in building planning. Types, sizes, decoration, ventilation, and equipment are discussed.

2275. Sahlstorm, John W. "Recent publications in the school-building field." *Am Sch and Univ* 1931-32:30

A list of 11 outstanding recent references in the field of school-building construction.

2276. *Smith, H. P. *Business administration of public schools.* World Book Co., New York, 1929. 432 p

An extensive work dealing first with general business problems, then with janitorial service, depreciation and insurance, and the complete building program.

2277. *Spain, C. L.; Moehlman, A. B.; and Frostic, F. W. *The public elementary school plant.* Rand McNally Co., Chicago, 1930. 602 p

The two divisions of this book deal with planning for plants of different types and executing the plan. The development of the plan; the arrangement of the plant; library, auditorium, gymnasium, and other health facilities; landscaping; and specialized schools all are treated.

Pages 97 to 100, 106 to 112, and 116 to 120 are published under the title of "Translating instructional needs into physical facilities" in volume 7 of *Nation's Schools*, January, 1931, pages 92, 94, and 96.

Pages 61 to 66 and 80 to 85 are published under the title of "An analysis of school planning" in volume 55 of *Architectural Forum*, December, 1931, pages 683-690.

2278. State of Pennsylvania. *Building and equipment for a one teacher school.* State Dept of Pub Instr, bul no. 32, Harrisburg, 1927. il, 36 p

Sets up standards and discusses sites, building plans, toilets, heating and ventilation, water supply, and equipment. Score card included.

2279. Strayer, George D. "An annotated bibliography on school buildings." *Sch and Soc* 31:810-13 Je 14 '30

A selected list of 23 references on school buildings.

2280. Van der Meer, Wybe J. *Catholic churches and institutions.* W. J. Van der Meer, Rockford, Ill., 1931

A monograph of the author's work, containing illustrations and plans of rectories, schools, gymnasiums, churches, and other such institutions.

2281. *Womrath, George F. *Efficient business administration of public schools.* Bruce Publishing Co., Milwaukee, Wis., 1932. 463 p

The following chapters are important in school building problems: II, Selection of sites for school buildings; III, Educational specifications for school buildings; IV, Architectural designs, plans, and specifications; V, Portable schoolhouses; VI, Building construction economies; VII, Mechanical equipment; VIII, Educational equipment; IX, Landscaping; X, Insurance; and XVII, Rehabilitation of public-school buildings.

Pages 12 to 32 are published under the title of "The selection of sites for school buildings" in volume 78 of the *American School Board Journal*, June, 1929, pages 47 to 48; in volume 79, July, 1929, pages 51 to 52, and August, 1929, page 65.

Pages 33 to 62 are published under the title of "Educational specifications for school buildings" in volume 79 of the *American School Board Journal*, September, 1929, pages 53 to 54; November, 1929, pages 61, 134, and 136; October, 1929, pages 94 and 96; December, 1929, pages 44 and 122.

Pages 63 to 93 are published under the title of "Architectural designs, plans, and specifications" in volume 80 of the *American School Board Journal*, January, 1930, pages 82, 136, and 139; February, 1930, page 130; March, 1930, pages 51, 143, and 144; May, 1930, pages 69, 132, and 134.

Pages 117 to 156 are published under the title of "Building-construction economies" in volume 80 of the *American School Board Journal*, June, 1930, pages 50 and 121; in volume 81, July, 1930, pages 126 and 128; August, 1930, pages 60, 114, and 117; September, 1930, pages 102, 105, and 106; October, 1930, pages 78 and 80; and in volume 82, February, 1931, page 108.

Pages 275 to 308 are published under the title of "The training of public school janitor-engineers" in the *Proceedings of the eighth annual session of the Ohio State Educational Conference*, Ohio State University, pages 486 to 508, 1928.

Pages 391 to 437 are published under the title of "Modernization of old school buildings" in volume 2 of *American School and University*, 1929-1930, pages 131 to 145.

II. Historical Development and Modern Characteristics of American School Architecture

2282. *American School Board Journal.* "Do the schools receive the best architecture?" (ed) *Am Sch Bd J* 76:69 My '28

Develops the fact that modern schools in the United States express the highest achievement in school architecture.

2283. "The American schoolhouse—then and now." (ed) *Am Sch Bd J* 77:63 Ag '28

Gives something of the evolution of the schoolhouse.

2284. "Thirty years a school architect." *Am Sch Bd J* 77:60, 97 N '28

A story of the professional work of William B. Ittner, school architect of St. Louis, Missouri.

2285. "Too much architectural formality." (ed) *Am Sch Bd J* 78:69 My '29

Points out the trend of recent developments in schoolhouse planning of breaking away from formal architectural style.

2286. "The American renaissance in school architecture." (ed) *Am Sch Bd J* 80:67 Ap '30

Discusses the changes that have came about in American school architecture.

2287. "American school architecture a culture incentive." (ed) *Am Sch Bd J* 83:62-3 Ag '31

Discussion of the value of the example of good architecture in school buildings in developing the artistic tastes of the children and the community.

2288. Barrows, Alice. "Changing conceptions of the school-building problem." *U. S. Bur Educ Bul,* no. 20, 1929. 20 p.; abstract in *El Sch J* 30:251-2 D '29

Summary of the results of a study of modern school buildings and the advancement that has been made in the past 20 years.

2289. Donovan, John J. "The school beautiful—its attainment." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:181-7

Emphasizes the responsibility of the men in charge of the building program that the result may be beautiful. Characteristics of good architecture are discussed.

2290. Engelhardt, N. L. "Achievements of American education—the school plant." *Bul of Dept of Supt of the N.E.A.* (Official report) 1930:78-81; abstract in *Sch and Soc* 31:294-5 Mr 1 '30

Brief discussion of the evolution of school buildings.

2291. "The importance of the modern school plant." *Sch Executives M* 50:11-13 S '30

Review of achievement in school building construction and the present status of scientific planning and construction.

2292. "Modern ideas for modern schools." *Arch Forum* 55:637-43 D '31. plan, il, bibliog

Discusses the changes that have come in our school objectives and the relation of these objectives to our building programs, treated from the elementary, junior-high, and senior-high-school levels. The relation of equipment to present-day school activities is also presented.

2293. Howe, George. "Modernism in school architecture." *Am Sch and Univ* 1931-32:93-6. il

Discusses the purpose of modernism in school architecture and gives examples, using illustrations from a number of outstanding cases.

2294. Ittner, William B. "Forty years in American school architecture." *Am Sch Bd J* 82:49-51 Mr '31

A discussion of important changes and improvements in school architecture that have come about during the last four decades.

2295. Moehlman, Arthur B. "The evolution of the public school plant." *Am Sch Bd J* 77:62-3, 139-40; 44, 139-40; 45, 135-6; 62, 133 S, O, N, D '28; 78:114, 116, 120; 92; 88, 90; 112 Ja, F, Mr, Ap '29. plans. il

Historical development and evolution of the public school plant in Detroit, 1838 to 1929. A number of school buildings are presented in some detail.

2296. Monahan, A. C. "The old Washington School of Alexandria, Virginia." *Am Sch Bd J* 81:40, 131 O '30

Description of the old three-room three-story school building which George Washington attended. Gives a history of the school which is still in use in connection with an eight-room elementary school on the same grounds.

2297. Moore, Susa P. "William B. Ittner, school architect." *Sch Executives M* 49:465-7 Je '30

Review of the work of Mr. Ittner in developing the modern school building.

2298. Schumacher, Fritz. "Trends in architectural thought." *Arch Forum* 54:399-402 Ap '31. il

Discusses prospective changes in architecture and makes some application to school buildings.

Cross-index†

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† The numbers in the cross-index refer to references, in all three parts of the bibliography, which deal with the subject under which the cross-index appears.

III. Architectural Styles and Building Types

2299. Ain, Gregory. "Progressive architecture for the progressive school." *Progressive Educ* 9:195-202 Mr '32. il

Description of a circular elementary school designed by Richard J. Neutra for *Rush City Reformed*, a mythical city.

2300. *American School and University.* "Prize-winning entries in the 1929 common brick schoolhouse competition." *Am Sch and Univ* 1930-31:82-3. plans, il

Description of some buildings produced in a contest conducted by the Common Brick Manufacturers Association in 1928 and 1929.

2301. *American School Board Journal.* "Shall high schools affect the ornate in architecture." (ed) *Am Sch Bd J* 77:70 Jl '28

Defense of great expenditures for school buildings.

2302. "Prize school buildings of the common-brick competition." *Am Sch Bd J* 78:57-69 Ja '29. plans, il

Describes and shows plans of: Upper Leacock Township Junior High School, Lancaster, Pennsylvania; Public School no. 11, Yonkers, New York; Harmony Grove School (elementary), San Joaquin, California; Halifax Elementary School, Halifax, North Carolina; Davis Elementary School, San Joaquin County, California; Oakdale School (2-room rural elementary), Omaha, Nebraska; Glenwood Landing Grade School, Glenwood Landing, New York; Stoughton High School, Stoughton, Massachusetts; Cheltenham High School, Elkins Park, Pennsylvania; Leland Stanford Elementary School, Sacramento, California; North Side High School, Corning, New York; Flower Hill School (elementary), Port Washington, Long Island, New York; Locust Valley Grade School, Locust Valley, New York; Cranbrook Preparatory School, Bloomfield Hills, Michigan; Sacramento Junior College, Sacramento, California; Frick Junior High School, Oakland, California; Kensington School (elementary), Great Neck, Long Island, New York.

2303. "Exterior designs in school architecture." (ed) *Am Sch Bd J* 79:67 S '29

An appeal for impressive design in school buildings in order that they may be the pride of the community.

2304. "The second common-brick school competition." *Am Sch Bd J* 80:58-67, 169 Ja '30. plans, il

Descriptions of the prize-winning plans.

2305. "School architecture—cheapness and ugliness." (ed) *Am Sch Bd J* 80:71 My '30.

An appeal for attractive school buildings and a statement of their value to the community.

2306. *Architectural Forum.* "The 1928 common brick school competition statement of the jury of award." *Arch Forum* 50:565-90 Ap '29. plans, il

Report of competition in the use of brick in school building. Shows pictures and plans of the winning buildings.

2307. "Proposed building for a school." *Arch Forum* 52:65-9 Ja '30. plans, il

Pictures and plans of a proposed public school building of seven stories.

2308. "Seven school buildings." *Arch Forum* 53:595-609 N '30. plates

Pictures seven public school buildings in different localities and shows their plans. One is in Holland, one in New York, one in New Jersey, and the others in California.

2309. *Architectural Record.* "Portfolio of current architecture—schools." *Arch Rec* 70:401-12 D '31. plans, il

Pictures and describes briefly the Avery Coonley School, Downers Grove, Illinois; School of Educational Research, New York City; Grade School in Husum, Copenhagen; Men's Dormitory Group, Pennsylvania State College; Mineral Industries Building, Pennsylvania State College.

2310. Barr, Alfred H., Jr. "Further comments on modern architecture." *Am Sch and Univ* 1932-33:33-4

Points out the effect of rigid adherence to architectural design at the expense of educational facilities.

2311. Burdick, Raymond C. and Madden, Ada R. "Where utility and beauty go hand in hand." *Am Sch and Univ* 1931-32:80-1. il

Description of the Sherman School, Watertown, New York, the per cu. ft. cost of which was 37.7¢.

2312. Childs, Frank A. "Architectural features of the Koenig School." *Am Sch and Univ* 1932-33:47-9. plans

Describes the various special units of the Joseph Koenig Elementary School at Two Rivers, Wisconsin.

2313. Credle, W. F. "Types of buildings and plans supplied by the Rosenwald Service in the South." *Nat Council on Schoolhouse Construction* (Proc of 8th annual meeting) 1930:9-11

Discusses the Rosenwald schools and tells the type of schools furnished by this fund.

2314. Hopkinson, George M. "What quality school buildings." *Am Sch Bd J* 82:35-8, 132, 134 Ja '31. plans, il

Based upon three grades of building specifications for the same floor plans for the John Marshall High School of Cleveland. Three degrees or classes of elaborateness for exterior architecture of the building were studied: Georgian, representing an elaborate design; classic, colonial, and modern, representing a medium cost design; and industrial, representing a low cost design. There was found to be a difference of $50,000 between elaborate detail, medium detail, and plain factory treatment.

2315. Hutchings, Emily Grant. "Adapting architectural precedent to American school design." *Nation's Sch* 3:27-32 Mr '29

Description of a number of schools which illustrate the way in which the architecture of a building should be fitted to the environment.

2316. Illinois Society of Architects. "Does it pay to put beauty into buildings?" *Am Sch Bd J* 80:60 Je '30

Emphasizes the financial value of putting beauty into school buildings.

2317. Ittner, W. B. "Planning the modern school building from the standpoint of architecture—abstract." *Bul of Dept of Supt of the N.E.A.* (Official report) 1931:220-1

Discussion of the needs of the architect for the proper planning of a building.

2318. Johnson, Philip. "Modern architecture for efficiency." *Am Sch and Univ* 1932-33:31-3

Stresses the importance of coöperation in the educational and architectural planning of school buildings.

2319. Little, William F. "A modern high school plant." In *Why go to high school,* Ch. VIII, p. 249-81. Bobbs-Merrill Co., Indianapolis, 1928

Advocates building school plants of the unit type and suggests standards for the buildings to be particularly fitted to different subject groups.

2320. Llewellyn, J. C. "Presentday public school architecture—abstract." *Bul of Dept of Supt of the N.E.A.* (Official report) 1931:196-7
Discusses the tendency of modern architecture to lean toward beautiful interiors, adaptability to the processes of education, and the elimination of the useless and distracting.

2321. McCornack, W. R. "Styles of school architecture." *Ohio State Educ Conf* (Proc of 9th annual session) 1929:114-16
States that the styles found generally in school architecture are the Colonial, reminiscent of the Classic; the Gothic; the Spanish; and sometimes the Italian.

2322. Moehlman, Arthur B. *School building types and efficiency.* Univ of Michigan, Ann Arbor, 1928-29. 30 p. ms
Discusses the need for school building planning and the wastes common in building. Makes comparison of plan types.

2323. Moore, Susa P. "Making purpose a part of design." *Nation's Sch* 5:35-9 My '30. plans, il
Description of the White Plains, New York, high-school building—a building of Collegiate-Gothic style.

2324. Payne, Edgar A. "The rural school as a community center." *Nation's Sch* 1:61-9 Ap '28. plans, il
A critical study of four schools, designed to combine practicability, beauty, and economy, which may also be used as civic and social meeting halls.

2325. Perkins, Dwight H. "Modern architectural design and its application to the schools of today." *Am Sch Bd J* 80:33-4 Ja '30
Shows how the character of the educational problem and the thoughtful use of materials have entered into the construction of various modern Chicago school buildings.

2326. Rogers, Don C. "Beautiful school buildings." *Chicago Sch J* 13:20-3 S '30. il
Points out that the modern trend in school buildings is toward more beautiful surroundings, which have a definite value to students. Discusses new school buildings in Chicago. Gives illustrations.

2327. Sargent, Porter. "Private school expansion and recent architectural trends." *Am Sch and Univ* 1931-32:84-9. il
Discusses the tendency to increase funds for private institutions and describes the plants of a number of such institutions.

2328. Sibley, Ernest. "Historic architectural styles and their adaptation to school building design." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:195-7
Gives examples of many historic styles of architecture and appeals for a style characteristic of the present.

2329. Smith, Harold W. "Arizona grammar school shows value of unit plan." *Nation's Sch* 4:45-7 Ag '29. plans, il
A description of the Glendale, Arizona, grammar school comprising 37 buildings on a tract of 23 acres.

2330. Study, Guy. "Period styles for character." *Am Sch and Univ* 1932-33:28-30
Discusses the lack of character in the architectural style of school buildings and points out the merits of various styles of architecture, especially the Tudor and the Colonial.

2331. Wood, Frank H. "Schoolhouse, a school home." *N Y State Educ* 18:756-9, 815-16 Ap '31. il
Tells of the effect upon children of the buildings in which they work. Shows some interiors that are unsightly and suggests some corrections.

2332. Youtz, Philip N. "School buildings that educate." *Progressive Educ* 9:189-94 Mr '32

A discussion of the effect of the architecture of the school building in the training of children.

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IV. The Building Shortage and the Status of Building Operations

2333. *American School Board Journal.* "Schoolhousing in New Jersey in 1927-28." *Am Sch Bd J* 76:106 My '28

Summary of the report of the education department of the state on the topic of schoolhousing.

2334. "The progress of school building construction." *Am Sch Bd J* 77:91 Jl '28

Shows the causes for demands for more school buildings and states that the number of buildings is not keeping up with increased enrollment.

2335. "The progress of school building construction in Philadelphia." *Am Sch Bd J* 77:52 N '28

Summary of a report on the amount of current revenue expended for school purposes, made to the Philadelphia School Board by their business manager.

2336. "School building programs in 1930-31." *Am Sch Bd J* 82:88, 90, 92, 95-6, 101-2 Ja '31

Brief summaries of school building operations in 140 cities in 39 states for the year 1930, and proposals for 1931.

2337. "A decade of schoolhouse construction." (ed) *Am Sch Bd J* 83:56 O '31

Concludes that the general trend of schoolhouse construction has not been affected by the present disturbance in business as shown by the total expenditures by years since 1920.

2338. "School architecture—retrospective and prospective." (ed) *Am Sch Bd J* 84:54-5 Mr '32

Discusses new construction materials and school equipment and points out that during this period of business depression good school buildings may be secured at a reasonable cost.

2339. Barnhill, O. H. "How Los Angeles builds schools." *Am Sch Bd J* 76:72-3, 177-8 Ja '28. plans, il

Story of the execution of the Los Angeles $34,000,000 building program. The system of supervision is explained.

2340. Credle, William Frontis. *The Julius Rosenwald Fund school building program in North Carolina.* Master's Thesis, George Peabody Col for Teach, Nashville, Tenn, 1930. 152 p

Gives the background and history of the Julius Rosenwald Fund in North Carolina.

2341. Davis, J. L. "Los Angeles city school building program." *Sierra Educ News* 27:20-1 N '31. il

Discussion of the $12,000,000 building program of the school city of Los Angeles.

2342. Embree, Edwin R. "How Negro schools have advanced under the Rosenwald fund." *Nation's Sch* 1:37-44 My '28. plans, il

Tells what this foundation is doing for the Negro race by helping to provide adequate schoolhouse facilities. A description of some of the buildings is given.

2343. Engelhardt, N. L. "A statewide analysis of new school-building construction." *Am Sch Bd J* 80:51-2 Ja '30

Presentation of an analysis of 34 school-building plans of recent date, showing many planning errors. Advocates frequent statewide reviews to reveal undesirable practices.

2344. Gates, C. R. "What's ahead in school construction." *Neb Educ J* 11:132-4 Mr '31. il

2345. Holy, T. C. "School-building surveys." *Educ Res Bul* 8:318-19 O 9 '29
Recommendations for nine communities of Ohio where school surveys were conducted in the year 1928.

2346. Mallery, Otto T. "Why build schools now?" *Nat Educ Assn J* 19:42 F '30
Points to the need for pushing the construction of needed new buildings in a period of economic depression.

2347. "National stability and school construction." *Kans Teach* 32:11-12 F '31
Discusses the financial problem in school building and the relation of this problem to varying financial conditions.

2348. *Nation's Schools.* "School building construction." *Nation's Sch* 1:104 Ja '28
Gives the status of school building construction during 1928.

2349. Parker, J. S. "Some facts that should be known about the school field." *Nation's Sch* 4:68-70 N '29
A brief review of school statistics that shows the extent and importance of the school. Shows how the school ranks among other industries in the general building field.

2350. Rogers, Don C. "School building report." *Chicago Sch J* 11:175-8 D '29
Gives a detailed report of the school buildings completed and under construction in Chicago during the period from January, 1928, to November, 1928. A map of Chicago shows the locations of the completed and uncompleted elementary, junior high, and senior high schools.

2351. *School.* "Board of Education outlines 1928 building plans with budget of $36,487,000." *Sch* 39:369 Ja 5 '28
Gives estimated costs on a number of school buildings to be erected in New York City.

2352. *School and Society.* "Rural junior high-school buildings." *Sch and Soc* 29:381-2 Mr 23 '29
Summarizes building statistics in a 1928 bulletin of the U. S. Bureau of Education.

2353. "The school building program of New York City." *Sch and Soc* 29:382 Mr 23 '29
Story of the $46,150,000 building program of New York City.

2354. "New school buildings." *Sch and Soc* 33:81 Ja 17 '31
Lists school buildings of major importance that are being constructed.

2355. "School construction in Boston." *Sch and Soc* 33:396-7 Mr 21 '31
Brief outline of the school-building program in Boston resulting from the survey.

2356. "Secondary school building in New York City." *Sch and Soc* 34:459-60 O 3 '31
Progress of building construction in New York City.

2357. *Sierra Educational News.* "Fifty new schools." *Sierra Educ News* 26:33-4 Je 30
General statement concerning the gigantic building program conducted during the past ten years.

2358. Smith, S. L. "A decade of achievements in schoolhouse construction." *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:58-67. mim
The achievements of 15 southern states in schoolhouse construction between 1920 and 1930.

2359. Strayer, George D. "Why 1930-1931 should be a record breaking school building year." *Am Sch and Univ* 1930-31:13-14
Presents the needs for new buildings among which are better lighting, fire protection, playgrounds, and sanitation.

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V. Preliminary Considerations and the Development of the Building Program

2360. Adams, Thomas. "The character, bulk, and surroundings of buildings." In *Buildings: Their uses and the spaces about them*, p. 22-188. Regional Plan of New York and Its Environs, New York City, 1931

Pages 42 to 46 discuss the placement of educational buildings in New York City. This is volume 6 of the Regional Survey.

2361. *American Educational Digest.* "Larger school buildings." (ed) *Am Educ Digest* 47:80 O '27

Discusses the size of buildings and its effect upon school work.

2362. "School building standards." (ed) *Am Educ Digest* 47:266-7 F '28

A discussion of the capacity of school buildings in relation to effective school work.

2363. *American School Board Journal.* "Some considerations on school-building programs." (ed) *Am Sch Bd J* 81:63 Ag '30

Consideration applied particularly to surveys and programs built upon them.

2364. Baltimore Department of Education. *The cost of the public schools.* Dept of Educ, Baltimore, Md. S '31. 47 p

Discusses among other things the building program, shifting population, the problems of finance, and the relations of increasing costs to increasing demands for service.

2365. Barrows, Alice. "Changing conceptions of the school building problem." *U. S. Office Educ Bul*, no. 16, p. 383-402, 1930

A discussion in the biennial survey of education, 1926-1928, of the evolution of the city school building with particular attention to the elementary school. Gives results of a survey of buildings in 90 cities in 33 states. Discusses the developing of school building standards. Gives instructions for conducting school building surveys.

2366. Bartholomew, Harland. "The school system and the city plan." *Am Sch and Univ* 1932-33:26-7

Points out the relation between the building program and numerous city activities as, for example, zoning and park and recreation programs.

2367. Betelle, James O. "Ways and means of increasing school facilities in times of business depression." *Am Sch Bd J* 84:29-31, 68 Ja '32. plans, il

Points out three ways to increase school facilities: first, by increasing the degree of utilization of present buildings; second, by building additions; and third, by building new buildings.

2368. Bluett, C. G. "A concrete method for a local financial and building survey." *Am Sch Bd J* 75:59-60, 133 O '27

Suggestions for a financial survey. Procedure is definitely set out. Comparative tables are shown.

2369. Bonsack, F. C. "The restricted school-building program." *Am Sch Bd J* 78:84-7, 170, 173 Ja '29. plans, il

An article designed to answer some of the many questions which confront the members of the average school board when they come to consider the erection of a new school building. One such problem is that of meeting school requirements with limited means.

2370. Carlson, Iver. "Sale of lots reimburses city for school site." *Am City* 39:146 Ag '28

Story of how Cohoes, New York, purchased a school site by the sale of surplus ground as city lots.

2371. Carpenter, W. W. *An elementary school building program for Jefferson City, Missouri.* Univ of Missouri, vol 30, bul no. 41 (Educ series no. 30), Columbia, N 1 '29. il, 82 p

Report of a study of the population, elementary plant, and finances of Jefferson City and suggestions for a building program.

2372. "A school-building survey work sheet." *Am Sch Bd J* 83:57, 108 Ag '31

Detailed work sheet to place in the hands of committees of graduate students who are beginning the work of making a school-building survey.

2373. Caswell, Hollis Leland. *City school surveys.* Columbia Univ, Teach Col, Contr to Educ no. 358, New York City, 1929. 130 p

Discusses the survey movement and its influence on standards of administration. Buildings and building programs are considered as phases of the survey movement.

2374. "School surveys and their influence on building problems." *Nation's Sch* 5:66-71 Ap '30

Gives some of the changes that school surveys have brought about in the construction of modern schools that protect the lives and health of the pupils.

2375. Cook, Katherine M. and Gaumnitz, W. H. "Availability of schools in rural communities." In *The status of rural education*, pt. I, by Guy M. Whipple, ed., Ch. III, p. 55-95. Nat Soc for Study of Educ (30th yearbook) 1931

Discusses among other things the problems of school accessibility and the location of rural, elementary, and high schools.

2376. Crowley, Francis M. "Surveying future Catholic high school requirements." *Am Sch and Univ* 1928-29:33-6

Suggestions for making a thoro inventory of Catholic school facilities and for outlining a progressive building program.

2377. Dalman, Murray A. "The problem of housing schools." *Am Sch Bd J* 80:64-5 Ap '30

A study of the needs, financing, and educational program of the public schools. A criticism of architects.

2378. Dickie, L. P. "Another city which has profited by planning ahead for its schools." *Am City* 37:635-6 N '27. il

Story of the way in which Tampa, Florida, met its building needs.

2379. Donovan, John J. "Little but important things often forgotten in schoolhouse planning." *Am Sch Bd J* 78:39-40, 156; 53-4, 144 Ja, F '29

Details of building and equipment for a very large high school.

2380. *Dudley, L. Leland. *The location of city school plants.* Harvard Univ, Bul of Educ, no. 14, Cambridge, Mass., 1929. bibliog, 130 p

Analyzes the factors involved in, and sets up criteria which should govern, the location of school plants in cities; makes applications of these principles to type cases in order to show how they apply under different conditions; and sets up a general method for locating schools in an ultimate city school plant.

2381. Dundon, Roscoe C. *A critical study of the mathematical problems in a school building program.* Master's Thesis, Univ of Pittsburgh, 1928-29

2382. Eicher, HuBert C. *What is the basis of a modern school building program?* p. 10-17. U. S. Office of Educ, pamphlet no. 7, Jl '30

Presents the essential factors of a plant survey and school building program. Discusses such items as pupil population, status of the district, and planning the building.

2383. Engelhardt, Fred. "Determining the plan of organization for a local school system." *Sch Executives M* 50:75-7 O '30

Points out the factors which determine the plan of organization and their relation to the building needs.

2384. *Engelhardt, N. L. *School building programs in American cities.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1928. plans, il, 560 p

Suggested school building programs for t.. ities, based upon determined needs. The cities are Lynn, Massachusetts; watertown, New York; Fort Lee, New Jersey; Paducah, Kentucky; Greensboro, North Carolina; Augusta, Georgia; Jacksonville, Florida; Beaumont, Texas; West Aurora, Illinois; and Rye, New York.

2385. "Selecting a site and planning a junior senior high school building for a growing village." *Am Sch and Univ* 1930-31:91-5. plans, il

Discusses the development of the building program in Rye, New York. The accommodations are tabulated.

2386. Engelhardt, N. L. and Burton, Thomas C. "The plant requirements of a country day school." *Am Sch and Univ* 1931-32:60-5. il

Sets forth the objectives of a country day school and, with these objectives as a basis, describes the ideal campus, plant, and equipment.

2387. Evans, Evan E. "Home room plan in secondary education." *Am Educ Digest* 47:294-7, 316 Mr '28

Outlines the technique of building the schedule for a home room plan of organization.

2388. Evans, Frank O. "The building program of the Los Angeles school district." *Am Sch Bd J* 84:43-4 F '32

Discussion of a bond issue and provisions for junior high schools to care for an increase of 127,000 students over the ten-year period, 1921-1931.

2389. Fitzpatrick, Katherine L. *The junior high school building program for Bridgeport, Connecticut.* Master's Thesis, Yale Univ, New Haven, Conn, 1929. 75 p

A ten-year building program for Bridgeport, Connecticut, based upon a survey of growth and predicted educational needs.

2390. Ford, George B. "Planning a school and playground expansion program." *Nation's Sch* 5:59-62 My '30

Discusses the importance and methods of planning the school expansion program.

2391. Ford, Willard S. "Are large or small units of school administration preferable?" *Am Sch and Univ* 1930-31:26-9

Comparison of rural and larger schools and discussion of factors which resist change.

2392. Fowlkes, John Guy. "A school building program." *Nation's Sch* 3:77-8 Ja '29

A general outline for the development of a school-building program.

2393. Fox, Ernest O. "How Detroit plans and erects school buildings." *Am Sch Bd J* 82:54-6 F '31. plans, il

Explains in detail the steps in the procedure of planning new school buildings under a definite building program in a large city.

2394. Freeman, Harry H. "The Buffalo public school survey." *Nat Municipal R* 20:457-9 Ag '31

Brief article describing the plan of organization of the Buffalo survey and the survey recommendations and conclusions.

2395. Gaumnitz, W. H. "Availability of public school education in rural communities." *U. S. Office Educ Bul,* no. 34, 1930. 53 p

Discussion of travel distances of rural school children as found in 22 selected counties.

2396. *Gwinn, Joseph Marr. "Our chief concerns with the future school building program." *Bul of Dept of Supt of the N. E. A.* (Official report) 1929:31-8; also *Nat Educ Assn* 1929:654-61; also *Sch and Soc* 29:339-45 Mr 16 '29; abstract in *Sierra Educ News* 25:22-3 Ap '29

Points out the significance of the newer developments in education on the problem of school building programs. Extracts are also published under the title of "Influential forces in future building programs" in volume 4 of *Nation's Schools*, October, 1929, page 24.

2397. Hamon, Ray L. "Sixteen significant books on developing school-building programs and planning school buildings." *Am Sch and Univ* 1929-30:294-5

Lists the outstanding books on school-building programs and annotates each briefly.

2398. Hardy, David P. "The public school building program of San Francisco, California." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:91-7; also under title "A study of the school building program of San Francisco." *Nation's Sch* 2:49-54 Ag '28. plans

Gives the story of the school building program of San Francisco following the earthquake which destroyed 29 buildings. Types of buildings constructed are discussed. Some of the general construction phases are mentioned, among which are lighting and ventilation.

2399. Hirst, C. M. "The school plant." *Nat Assn Pub Sch Bus Officials* (Proc of 20th annual meeting) 1931:76-84

Discusses the selection and development of the site, the planning and location of the building, and the proper equipping of the plant. Lighting is also considered.

2400. Hixson, Joseph H. "What local communities expect from state departments of education in school building operations." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:169-82. mim

Discusses the composition of the staff of the state division of schoolhousing and the duties which should properly be assigned to such a division. Ten problems, advice upon which should be available in the state division, are discussed in detail.

2401. "Matters of first importance in initiating a school building program." *Am Sch and Univ* 1930-31:20-5

Lists and discusses the steps to be taken to initiate properly a building program. Gives the form used in New York for the application for approval of building plans.

2402. Hixson, L. S. and Hixson, J. H. "School proclaims the community." *N Y State Educ* 18:744-50 Ap '31. il

Discusses the school building as a representation of the pride of the community and suggests certain points to be surveyed before a building project is undertaken. Careful planning is urged, as is also careful selection of an architect.

2403. Holy, T. C. "Actual traveling distances of elementary-school pupils." *Educ Res Bul* 7:364-6 N 28 '28

A criticism of the use of the one-half mile radius for placement of school buildings.

2404. "Distribution of county high schools." *Educ Res Bul* 9:412-18 O 22 '30

A location study of rural and village high schools of Ohio.

2405. "Making a scientific school plant survey." *Nation's Sch* 7:21-7 Ap '31. maps, il

Practical suggestions for building programs. Discusses different types of surveys and suggests procedure. Suggests ways in which to get the best value from a survey.

2406. Irwin, Eugene J. "The San Francisco building program." *Am Sch Bd J* 78:33, 170, 175-7 Ja '29. plans, il

Contains the story of how San Francisco developed its building program and a description of some of its buildings. Percentages of floor space devoted to different purposes are shown.

2407. Ittner, W. B. "Fundamentals in planning school buildings." *Arch Forum* 48:305-15 Mr '28

2408. Jones, E. W. "Planning schools for a city of under 100,000." *Am Sch and Univ* 1932-33:57-9. plans, il

States some principles of planning and applies them to the situation in Shreveport, La. Shows how a building not planned for expansion can be added to, the Barret Elementary School.

2409. Kennon, Charles N. *A study of the schools of Kent County, Texas, with recommendations for reorganization and improvement.* Master's Thesis, Univ of Colorado, 1930; also in *Abstracts of theses for higher degrees, 1930,* Univ of Colorado, Univ Studies, vol 18, no. 2, p. 83-4 (Univ Bul, vol 30, no. 11; General series no. 286), Boulder, D '30

Reports a study of the schools of Kent County and makes recommendations for the correction of some of the evils found.

2410. Lane, Goldie. "A carefully planned school building." *Sch Executives M* 51:311, 329 Mr '32

Brief statement of the principles involved in the planning of a school building.

2411. Lineback, Clifford. *The need for reorganization of rural secondary schools of Howard County, Indiana,* Ch. II, p. 10-37. Master's Thesis, Indiana Univ, Bloomington, 1929

Detailed description of different kinds of rooms is given, as are also details concerning heating, ventilation, service systems, sites, etc.

2412. Llewellyn, Joseph C. "Planning new school buildings." *Sch Executives M* 49:411-13 My '30

Discusses briefly the following points: materials, financing, legislation, developing the plan, letting the contracts, general contractor, payments, and equipment.

2413. McClinton, J. W. "Problems in school building construction." *Am Sch and Univ* 1928-29:75-7

Discussion of a number of major problems which project themselves into every building project.

2414. McCornack, W. R. "Development of a building program in a rapidly growing community." *Am Sch Bd J* 76:78-82 Ja '28. plans, il, map

Story of how Cleveland Heights solved the problem of providing school facilities for a phenomenal increase in population. A number of the buildings are shown.

2415. McGee, H. G. "The capacity use of school buildings." *Am Educ Digest* 48:147-50 D '28. plans, il

Reports a study of some characteristics in the problem of capacity use of schools in Akron, Ohio.

2416. McPheeters, A. A. *A proposed junior high school building program for Lexington, Kentucky.* Master's Thesis, Univ of Cincinnati, 1930; abstract in *Graduate theses in education, Teachers College, University of Cincinnati, 1927-31,* by Carter V. Good; Walter L. Collins; and Chester A. Gregory, eds., vol 1, p. 340-1, Univ of Cincinnati, 1931

A synopsis of the above thesis, which was a study of conditions in Lexington, and a suggested building program based thereon.

2417. *Manufacturers Record.* "Would incorporate school structure in Knoxville viaduct." *Manufacturers Rec* 100:24 Ag 27 '31

Gives a plan proposed to the city of Knoxville to utilize the waste space under the viaduct for a vocational school. The building would have three floors and the top floor, directly under the viaduct floor, would be used for shop work so any vibrations on the street might not interfere with classroom work. Points out the great savings possible.

2418. Moehlman, Arthur B. "Relating the school plant to the instructional process." *Nation's Sch* 4:21-4 Ag '29

Presents the administration of equipment facilities as a complementary phase of the instructional process. A number of equipment problems are presented.

2419. "Relating the school plant to the functional organization." *Nation's Sch* 4:37-42 S '29

Describes the way in which Hamtramck, Michigan, has improved its educational plants. Duties of superintendent, board, architect, and contractors are set out.

2420. "Educational policy and the school plant." *Nation's Sch* 6:51-4 Jl '30

Discussion of the different factors and steps involved in satisfying the need of the physical school plant as an expression of curricular objectives.

2421. "Factors affecting school policies." *Nation's Sch* 6:68-71 D '30

Stresses the importance of exercising extreme care in planning the future organization. Uses figures to show the ideal locations for the different types of buildings, elementary, junior high, and senior high schools.

2422. "Planning the ultimate school plant." *Nation's Sch* 8:82, 84 Jl '31

Presentation of the factors which should be considered in planning the ultimate plant.

2423. "Disposing of the present plant." *Nation's Sch* 8:86, 88, 90 Ag '31

Classifies existing buildings as follows: (1) the units, building, and site that will satisfactorily fit into the ultimate plant without change, (2) units that will fit the future plant with changes in size of site, etc., (3) units that will not form a part of the future plant but which will be used for a time, and (4) units that must be abandoned altogether.

2424. "Building the ultimate plant." *Nation's Sch* 8:70-3 O '31

Discusses acquisition of sites and population growth studies as bases for objectively developing the building program.

2425. *Nation's Schools.* "Planning a new school building." *Nation's Sch* 1:78, 80 Je '28

Discusses the need for and method of developing a scientifically planned school building program.

2426. "Planning of new school is an engineering problem." *Nation's Sch* 3:24 Ja '29

Lists some questions to be considered when a building program appears necessary.

2427. "Determining the needs of a school building program." *Nation's Sch* 3:32 Ap '29

Lists some of the practices commonly followed in determining the needs of a school-building program.

2428. Oberholtzer, E. E. "How coöperative service effected a successful building program." *Nation's Sch* 8:21-4 O '31

Outlines the coöperative development of the Houston, Texas, building program.

2429. Pauly, Frank R. "Tulsa's continuing study of schoolhousing." *Am Sch Bd J* 80:48, 129 My '30

Sets out Tulsa's plan for studying its building needs and presenting them to the public. Shows how the school city meets its needs and cooperates with other city departments.

2430. Phillips, Guy B. "Building program of the Greensboro city schools." *Am Sch Bd J* 82:49-53 Ap '31. plans, il

Story of the way in which Greensboro, North Carolina, has met its schoolhousing problem.

2431. Platzker, Joseph. *Schools.* East Side Chamber of Commerce, New York City. il, 4 p

Report of a survey of public schools on the Lower East Side of New York City. Considers among other things conditions of buildings, extent of play-space, and lighting facilities, and suggests a building program.

2432. Pruett, Haskell. *Planning rural school buildings for Oklahoma.* Master's Thesis, Univ of Oklahoma, Norman, 1928-29. 280 p

A study of plans and specifications as furnished by all state departments of education. Also presents the standards required. Concludes that, for small buildings, the plans should be prepared in units. Conclusions resulted in the changed form of presenting the plans and specifications to the school authorities planning new buildings.

2433. Rice, Charles A. "The advantage of a long-range building program." *Am Sch and Univ* 1932-33: 19-20

Points out how past, present, and future developments must be considered in any adequate building program.

2434. Robertson, C. L. *A building survey of the public schools of Jamestown, North Dakota, together with a suggested building program.* Master's Thesis, Univ of North Dakota, University, 1931. 92 p.; abstract in *Sch of Educ Rec* 17:38-9 N '31

Presents a detailed analysis of the present plant and the population forecasts by the Bell Telephone technique.

2435. Rutledge, R. E. and Ching, J. Frederic. *Building and site program for the Oakland public schools.* Pub Sch, Dept of Res, Oakland, Calif., 1931

Report of a study of the adequacy of the school plants of Oakland. Population trends are also studied.

2436. Schmidt, H. W. "Some practical problems in connection with school building planning." *Am Sch Bd J* 78:42-4, 151-2 Ap '29

Recommends that teachers be provided with rooms for study, organization work, consultations, or even loafing, as the mood may be. Makes suggestions as to the arrangement and location of these rooms.

2437. *School Executives Magazine.* "Comprehensive school building project." *Sch Executives M* 48:396-7 My '29. il

Story of the building program of Knoxville, Tennessee. The provisions common to all schools are briefly set out.

2438. "The Boston building program." (ed) *Sch Executives M* 49:424 My '30

Boston's dilemma in financing her needed building program.

2439. Sexson, John A. "Six-four-four plan of school organization." *Am Educ Digest* 48:56-9, 79 O '28

Description of the Pasadena plan and some discussion of the physical plant in connection with it.

2440. Shepherd, H. P. "The school building program of Knoxville, Tennessee." *Am Sch Bd J* 78:70-4 Ja '29. plans, il

The story of how Knoxville met three school-building problems: (1) a housing shortage; (2) many old buildings not providing adequate facilities; and (3) no housing for administration.

2441. Smith, Harry P. "The school building program of Syracuse, New York." *Am Sch Bd J* 82:66-7, 140, 142 My '31

A study of the needs of Syracuse and the story of how the needs were met.

2442. Smith, Henry Lester and O'Dell, Edgar Alvin. *Bibliography of school surveys and of references on school surveys.* Indiana Univ, Sch of Educ, vol 8, bul nos. 1 and 2, Bloomington, S-N '31. 212 p

A comprehensive list of surveys. In addition to the specific building surveys listed many of the comprehensive surveys contain sections on building conditions and suggested building programs. The following numbered references listed in the bibliography are building surveys: 1, 2, 59, 62, 68, 70, 73, 74, 75, 76, 77, 84, 85, 89, 93, 112, 113, 117, 122, 139, 153, 154, 156, 200, 201, 202, 204, 230, 233, 238, 239, 244, 245, 246, 250, 262, 267, 268, 347, 349, 357, 360, 417, 420, 423, 426, 430, 446, 447, 453, 492, 494, 495, 498, 501, 502, 505, 516, 533, 536, 537, 545, 553, 565, 566, 569, 570, 576, 583, 587, 605, 611, 622, 629, 631, 644, 646, 647, 648, 652, 659, 663, 665, 674, 683, 693, 694, 697, 702, 708, 714, 718, 722, 730, 736, 757, 763, 776, 792, 793, 797, 798, 799, 804, 812, 813, 822, 831, 833, 853, 857, 872, 873, 874, 880, 883, 894, 895, 902, 914, 915, 916, 920, 924, 925, 955, 967, 968, 975, 976, 979, 988, 998, 1007, 1030, 1034, 1043, 1069, 1071, 1077, 1095, 1112, 1114, 1118, 1120, 1121, 1122, 1125, 1127, 1129, 1131, 1134, 1138, 1141, 1142, 1143, 1146, 1147, 1148, 1149, 1162, 1180, 1195, 1209, 1211, 1212, 1213, 1216, 1247, 1251, 1259, 1304, 1310, 1317, 1318, 1354, 1362, 1364, 1368, 1417, 1431, 1432, 1436, 1439, 1447, 1452, 1454, 1469, 1479, 1485, 1486, 1488, 1489, 1491, 1497, 1503, 1506, 1507, 1508, 1512, 1514, 1515, 1517, 1538, 1543, 1552, 1563, 1596, 59a, 102b, 102c, 114a, 122a, 123a, 406a, 984a, 1142a.

2443. Smith, Howard Dwight. "The ten-year building program of the Columbus, Ohio, Board of Education." *Am Sch Bd J* 78:49-58, 126, 128, 130, 134, 145 Mr '29. plans, il

A statement of the problem which faced Columbus and the way in which the problem has been met. The relation of the school architect to other school officials is presented. The building program is given in detail. Various buildings are described fully. Rehabilitation as a phase of the program is discussed.

2444. Stetson, Paul C. "The Dayton school-building program." *Am Sch Bd J* 79:56-62, 150, 152 Jl '29. plans, il

A discussion of the principles underlying the program and a description of the buildings erected. A four-million-dollar program.

2445. Strayer, George D. "Planning the school plant in relation to the recreational needs of the community." *Am Sch and Univ* 1930-31:225-8

Shows the importance of considering community recreational needs when planning the school plant.

2446. Strayer, George D. and Engelhardt, N. L. *A school building program for the city of Utica, New York.* Bd of Educ, Utica, N.Y., 1930. plans, il, 65 p

Report of a survey of the buildings of Utica with respect to site, structure, heating and ventilation, lighting, fire protection, and other items. Suggestions for a building program are made.

2447. Tanger, Landis. "The Reading school building program." *Am Sch Bd J* 76:57-68, 124, 126 F '28. plans, il

Sets out some of the features of the Reading program and describes a number of the buildings.

2448. Theisen, W. W. "School-building and site programs." *Am Sch and Univ* 1929-30:18-21. il

Emphasizes the need for continuous surveys. Suggests building the program around existing or contemplated educational policies. Stresses the need of proper publicity.

2449. Turner, James M. "Factors determining the size of a high school building." *Am Sch Bd J* 76:46-7, 172, 174 Ja '28

A review of the opinions of educators who have given some attention to the factors determining the size of high schools.

2450. University of North Carolina. *School building program for Leaksville Township, Rockingham County, North Carolina.* Univ of North Carolina, Bur Educ Res, Sch of Educ, Res and Service Bul, vol 2, no. 1, Chapel Hill, 1927

Tells of the scoring of three elementary buildings, using the Strayer-Engelhardt score card for elementary buildings. A population enrollment and general social survey as well as an educational survey were made.

2451. Unzicker, S. P. "What size junior high school." *Sch R* 36:374-9 My '28

Discussion of housing and equipment as it is related to the size of the junior high school.

2452. Van Westrienen, H. J. "Planning a school-building program." *Ind Arts and Voc Educ* 20:159-65 My '31. plans, diag

Discusses the need for proper school building planning and sets out some requirements for the industrial arts department.

2453. Warner, Bertha E. *Educational philosophy as shown in school buildings, school management, school supervision, and school theories and practices.* Master's Thesis, New York Univ, New York City, 1930. 52 p

A study of the educational theories and practices of the philosopher, the psychologist, the teacher, the sociologist, the physician, and the psychiatrist in their attempt to fulfill the modern aim of education.

2454. Watrous, Valerie. "Los Angeles sets a school construction record." *Am Sch Bd J* 80:72-5, 154, 156 Ja '30. plans, il

Story of the building of three junior high schools.

2455. Wilson, Otis G. and Ittner, William B. "Building program of Fairmont, West Virginia." *Sch Executives M* 49:268-70, 288 F '30. plans, il

Outline of the building program and floor plans of the senior high school at Fairmont.

2456. Wisehart, Roy P. "Determining school building needs." *Indiana Teach* 73:30 O '28.

A brief outline of the common practices in the determination of the needs of the building program.

2457. Witham, Ernest C. "A continuous rebuilding survey." *Am Sch Bd J* 78:49-51, 166, 169-70 Ja '29

Shows the plan of Wilmington, Delaware, for securing and using information relative to building needs. Maps and figures are good.

2458. Womrath, George F. "Ultimate physical plant programs." *Am Sch Bd J* 82:81, 130 Ja '31. il

Description of the development and application of population indices by the Minneapolis school officials, whereby it is possible to plan 25-year building programs.

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SCORE CARDS AND BUILDING MEASUREMENT

2459. *Architectural Forum.* "Check list for school buildings." *Arch Forum* 55:772-4 D '31

Report of a research covering buildings of different sizes, setting up a check list of salient points not to be overlooked in checking plans, details, and specifications. This check list covers heating, ventilation, plumbing, design, materials, different special features, and electrical work.

2460. Bryant, Burl. *Texas rural school standards.* State of Texas, Dept of Educ, bul no. 280, Austin, N '30. 31 p

A revision of the score card and standards presented by Mary Shipp Sanders in reference no. 318.

2461. Chandler, H. E. and Guthridge, W. H. "Utilization of high school buildings." *Univ of Kans Bul of Educ* 2:22-4 F '29

"Review of a master's thesis on *A measurement of high school building utilization*, by Wallace H. Guthridge, University of Kansas, 1928."

2462. Edwards, Walter A. *Utilization of the instructional rooms of the first four grades of the elementary schools of Dayton, Columbus, and Marion, Ohio.* Master's Thesis, Ohio State Univ, Columbus, 1929. 140 p

States that, when 15 square feet were used as the amount of classroom floor area to be provided per pupil, the average school in this study was using 70 per cent of the classroom floor space.

2463. *Engelhardt, N. L. "The effective utilization of the high-school plant." *Bul of Dept of Sec-Sch Prin of the N.E.A.* (Proc of 13th annual meeting), no. 25, p. 156-71, Mr '29

Very good discussion of all phases of the school plant utilization problem. Discusses Morphet's study, the measurement of utilization in comparatively new buildings, the utilization of the site, and over-utilization.

2464. "Planning high school buildings for better utilization." *Arch Rec* 66:276-7, 280-6 S '29

Discusses the planning of high school buildings with respect to pupil station utilization. Shows how this problem is related to some antiquated ideas of school procedure.

2465. *Survey field book for the analysis of a high school building.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1931. 45 p

An excellent guide to be used as an aid in using the Strayer-Engelhardt score card and standards for evaluating secondary school buildings.

2466. "Score card for junior high school buildings." *Am Sch and Univ* 1932-33:37-8

Shows the score card developed by Strayer and Engelhardt.

2467. *Holy, T. C. and Arnold, William E. *Standards for junior high school buildings.* Ohio State Univ, Bur of Educ Res, 1932. mim, 62 p

A complete list of standards covering all phases of the junior-high-school building, organized in new way. This list is essential to the superintendent who is planning to build a new junior-high-school building.

2468. Irons, G. E. "When the school building must be modernized." *Nation's Sch* 2:61-6 N '28. plans, il

Report of a study of the old elementary buildings of Cleveland to determine the nature and extent of remodeling and replacement.

2469. Johnson, Earl A. *Needs for county reorganization of secondary schools,* p. 10-28. Master's Thesis, Indiana Univ, Bloomington, 1928

Report of a study of the high-school plants in Gibson County, Indiana. Sites are considered, as are also ventilation, cleaning, service systems, and other items.

2470. Moehlman, Arthur B. "When remodeling is profitable." *Nation's Sch* 4:43-51 N '29. il

Describes the way in which Hamtramck, Michigan, modernized the old Holbrook Elementary School. Costs are shown and details of construction listed.

2471. "Appraising the existing school plant." *Nation's Sch* 7:84, 86, 88, 90 Mr '31

The factors, as recommended by the author, upon which the school plant should be appraised include mechanical efficiency, instructional efficiency, space efficiency, site, location, current use, and possible future use.

2472. "How to determine the building's instructional efficiency." *Nation's Sch* 7:84, 86, 88 Ap '31

Instructions for measuring the instructional efficiency of a school building under three groups of needs.

2473. "Space efficiency; a major factor in appraising the school plant." *Nation's Sch* 7:80, 82, 84 My '31

Directions for the appraisal of the space efficiency of the existing school plant.

2474. "Location and use as factors in plant appraisal." *Nation's Sch* 7:78, 80, 82 Je '31

Discussion of ten factors which should receive consideration in the appraisal of the school site. Appraisal of the building may be made on the basis of absolute or working capacity.

2475. Morgan, Herschel Seymour. *The utilization of the school plant with special emphasis on its use in South Dakota.* Master's Thesis, Univ of South Dakota, Vermillion, 1929. 73 p

Reports a study of the use of the school building and equipment, with particular attention to their use for community purposes.

2476. Morphet, Edgar L. *The measurement and interpretation of school building utilization.* Columbia Univ, Teach Col, Contr to Educ no. 264, New York City, 1927. 102 p.; reviewed by T. C. Holy in *J Educ Res* 17:305 Ap '28

A study of the utilization of a building to capacity. Sixty-four schools in six states are included in the study.

2477. "School building utilization." *Am Sch and Univ* 1928-29:140-3

A good discussion of room utilization based on a study of 52 high schools. Recommends periodic utilization analyses and adaptation of the building to the educational program.

2478. Nibecker, A. S., Jr. "A building and janitorial survey of the Los Angeles school buildings." *Am Sch Bd J* 79:56, 137-8 Ag '29

Report of W. E. Record's building survey of the Los Angeles schools. Procedure and questionnaire are shown. Findings are summarized.

2479. Ouimet, Harold Kingsbury. *Obsolescence of elementary school buildings.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, Calif., 1929

2480. *Pittsburgh Schools.* "The utilization of a Pittsburgh high school." *Pittsburgh Sch* 5:113-27 Mr-Ap '31

A very detailed utilization study following the Morphet technique.

2481. Pugh, Jesse J. "Efficiency in the use of a school building." *Educ Res Bul* 8:89-94 Mr 6 '29

A study of a junior-high-school building planned to accommodate 600 pupils, showing the way of attaining greater efficiency in the use of the building without extending the length of the school day; first, by better occupancy of vacant rooms; and second, by better utilization of rooms already occupied.

2482. Spear, Roy D. *A study of pupil-station and room utilization class rooms of 14 high schools located in Lyon and Wabaunsee counties.* Master's Thesis, Univ of Kansas, Lawrence, 1930

2483. State of Indiana. *Indiana school standards with instructions for scoring.* State Dept of Pub Instr, Supplement to bul no. 100, rev, Indianapolis, 1930. 26 p
Gives a scale for scoring buildings, grounds, and equipment of Indiana schools. The Indiana standards are defined.

2484. Strayer, George D. "Planning school buildings to meet future school needs." *Am Sch and Univ* 1928-29:11-14. charts, il
Suggests items which should be taken into account in the development of the building program.

2485. "Modernizing the school plant of an old city." Am Sch and Univ 1931-32:156-9. chart
Discusses the use of score cards in making a survey and tells of the work of determining building needs in an old city.

2486. Strayer, George D. and Engelhardt, N. L. *Scorecard for junior high school buildings.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1932. 6 p
An adaptation of the author's earlier scorecard for high-school buildings.

2487. Timlin, Irwin A. *A survey of Pittsburgh high school buildings with its educational implications.* Master's Thesis, Univ of Pittsburgh, 1930
Summary of a study dealing with the high schools of Pittsburgh. Makes some pertinent recommendations for improvements.

2488. Waterman, Ivan R. *Utilization of San Francisco high school buildings.* Pub Sch, Dept of Educ Res, San Francisco, Calif., 1930
Report of a study in the San Francisco schools to determine the use being made of the buildings and equipment.

2489. Wood, Frank H. "Can school building costs be lowered without lowering standards?" *Am Sch Bd J* 84:49-50 F '32; also *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:86-96. mim
Stresses the necessity for educational planning of school buildings to the end that greater building and pupil-station utilization may be achieved. Points out the importance of selecting architects with experience in meeting the educational needs of the community thru school building plans.

2490. Young, George K. *A study of pupil capacity of elementary school buildings existing in Pittsburgh in 1930.* Master's Thesis, Univ of Pittsburgh, 1930; abstract in *The graduate school abstracts of theses, researches in progress, and bibliography of publications.* Univ of Pittsburgh, vol 27, bul no. 3, p. 413-14, N 15 '30
Report of a comparative study in building utilization made of 20 Pittsburgh schools using the platoon plan and 20 schools using the traditional plan. Increase in efficiency of buildings, rooms in buildings, age, efficiency, areas, use of rooms, and gain in pupil capacity in the buildings are studied.

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STUDIES IN POPULATION AND PUPIL ACCOMMODATIONS

2491. Berry, William J. "The use of dot maps for showing distribution of population." *Sch Sci and Math* 27:814-16 N '27

Shows how dot maps may be used to advantage and presents cautions in their use.

2492. Blair, Horace Horton. *A study of the growth of population and a prediction of population and school enrollment for the city of San Diego, California.* Master's Thesis, Univ of California, Berkeley, 1929

2493. Burkhard, William John. *Accuracy of school population prediction.* Master's Thesis, Univ of California, Berkeley, 1930. 26 p.; abstract in *Univ H Sch J* 10:254 D '30

A study of those surveys predicting school population which have been published long enough to allow a "check up" of actual school enrollment against the predicted population, with a view to ascertaining how accurate the predictions have been.

2494. Engelhardt, Fred. "Economic factors related to school-population growth." *Am Sch Bd J* 76:52-3, 172 My '28. charts

Shows the need for careful anticipation of the future school needs of the city or community and of the future possibilities of caring for these.

2495. "Population and school planning." *Am Sch and Univ* 1928-29:73-4

Discussion of population problems and their connection with school planning. The need for continuous planning is presented.

2496. Gray, Robert Floyd. "Report of San Francisco schools." *Calif Q Sec Educ* 5:24-5 O '29

Report of an investigation to predict the school population of San Francisco to 1940.

2497. Holy, T. C. "Junior and senior high school growth and its effect on housing requirements." *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:98-107. mim; also *Am Sch Bd J* 84:32, 100 Ja '32

Discussion of how the rapid growth and introduction of new subjects have increased the building costs of the junior and senior high schools and how this increase compares with increase in total building costs.

2498. *Houser, G. C. "How accurately can engineers predict future population growth of cities?" *Am City* 39:124-6 S '28

Gives five methods of predicting future population and compares some estimates by these methods with census enumeration figures.

2499. Irons, G. E. "Planning the new school buildings with graphic records." *Am Sch Bd J* 83:47-8, 108 Ag '31

Explains the use of graph sheets to indicate enrollment by grades, schools, and districts for quick reference in securing building program data for the city of Cleveland.

2500. *Jones, Charles C. *The development of measures for predicting growth of school population,* Ch. V, p. 87-109. Master's Thesis, Indiana Univ, Bloomington, 1931

Lists measures used in predicting the growth of school population and suggests ways of preparing for the education of future generations.

2501. Searson, Anson Van L. *A suggested method for determining the housing requirements of union free school districts of New York.* Master's Thesis, Cornell Univ, Ithaca, N. Y., 1930

A comparatively accurate method of determining housing requirements. The number of schools is small, but the method should prove useful to principals.

2502. Thompson, Warren Simpson. *Population problems.* McGraw-Hill Book Co., Inc., New York City, 1930. tables, diag, 462 p

Criticizes the estimating of population for different localities. Suggests that too many factors not taken into consideration are significant.

2503. Whelpton, P. K. "Population of the United States, 1925 to 1975." *Am J Sociology* 34:253-70 S '28

Gives an estimate of the population of the United States in ten-year periods.

2504. Whiteneck, Hosea A. "Population and school growth." *Calif Q Sec Educ* 6:13 O '30

Brief report of population prediction for Long Beach, California, and basic principles in developing the method of forecasting.

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296	2273	2425	2894
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ADAPTATION OF THE BUILDING TO SPECIFIC EDUCATIONAL NEEDS

2505. *American Educational Digest.* "Central School building, Rochester, Minnesota." *Am Educ Digest* 47:308-9 Mr '28

Brief description of a building housing the elementary special classes, certain units of the junior high school, and the athletic plant for the entire city school system.

2506. *American School Board Journal.* "A schoolhouse planned to fit the school program." *Am Sch Bd J* 84:47-8 F '32. plans, il

Brief description of the outstanding features of the new Edison Elementary School at Danville, Illinois.

2507. Anderson, Homer W. "Equipping the classrooms for the pupils' needs." *Nation's Sch* 1:13-20 Ja '28. il

A discussion of changes in school building appearance and arrangement and of the forces influencing progress in this line. Flexibility as a new principle in construction is presented.

2508. *"Principles underlying the organization of a school building." *Am Sch Bd J* 78:37-8, 155-6 Ja '29. plans, tables, diag

Discussion based upon three fundamental principles which have gained extended recognition—(1) expansibility, (2) flexibility, (3) economy; and five which have been less universally applied—(4) adaptability, (5) accessibility, (6) orientation, (7) noninterference, (8) association.

2509. "Planning the modern school building from the standpoint of curriculum—abstract." *Bul of Dept of Supt of the N.E.A.* (Official report) 1931:221-3

Discussion of certain principles relating to curricula which underlie the organization of school buildings.

2510. Berg, B. Conrad. "The Newton plan." *Platoon Sch* 2:13-16 Ap '28. plans, il

Description of the building and organization of the Emerson Hough Grade School of Newton, Iowa.

2511. Burr, Samuel Engle. "The building program's relation to ability grouping." *Nation's Sch* 2:52-4 Jl '28

Discussion of ability grouping and the way in which the spread of its use has been hindered by lack of classroom facilities. Lynn, Massachusetts, buildings are used to illustrate.

2512. Case, R. D. *The platoon school in America.* Stanford Univ Press, Stanford University, Calif., 1931. 283 p

The following chapters are of interest in this field: Chapter IV, The platoon-school plant, which deals with building and equipment; Chapter VI, The home room, which tells how it is different; Chapter VII, Physical education; Chapter VIII, The platoon-school library, which tells about the housing and equipment; Chapter IX, The auditorium and its use, which explains requirements for the acoustics, seating, and equipment; and Chapter XIII, Comparative costs, which gives the capital outlay, insurance, elimination of equipment, etc.

2513. Childs, Frank A. "Schools designed to meet needs of intermediate elective classes." *Nation's Sch* 4:59-66 O '29. plans, il

A description of the Nichols Intermediate School and the Haven Intermediate School in Evanston, Illinois. Shows a number of new features in construction.

2514. Collins, Ellsworth. "The school as a workshop." In *Progressive teaching in secondary schools,* Ch. XVII, p. 310-20. Bobbs-Merrill Co., Indianapolis, 1931

Discusses building and workshop needs for schools where teaching is organized for purposeful activity of doing, creating, making, and exploring.

2515. Cunningham, H. F. "Place of the school building in the community." *Neb Educ J* 11:146-7 Mr '31. il

2516. Curry, W. B. "Modern buildings for new schools." *Survey* 66:496-8 S 1 '31. il

Discusses the building of schools to meet educational needs rather than to satisfy the architectural ideas of designers.

2517. Davis, Homer. "Principles of planning buildings for platoon schools." *Platoon Sch* 3:53-7 Je-Jl-Ag '29. plans

Discusses five principles of planning peculiar to the platoon organization.

2518. Ely, Selden M. "The Park View Platoon School." *Platoon Sch* 6:20-1 F '32

Tells of the adaptation of an existing building in Washington, D.C., to the platoon work.

2519. Frostic, F. W. "School plant serves educational program." *Mich Educ J* 7:601-3 Je '30. il

2520. Gerwig, George W. "The platoon system of schools from the standpoint of finance." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:97-105

Discusses the platoon type of school from the standpoint of construction and operation costs and characteristic features.

2521. Gowdy, Jean L. "The platoon schools of St. Paul." *Norm Instr and Prim Plans* 38:62, 115 F '29

A description of the working of the platoon plan. Discusses briefly the building adaptation to this plan.

2522. Hill, Andrew P. "Suiting the rural building plan to educational needs." *Nation's Sch* 7:60-8 Je '31. plans, il

Discussion of one- and two-room rural schools and how they may be designed to care for the rural community needs.

2523. "The effect of curriculum changes on schoolhouse construction." *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:43-56. mim

Discussion showing the effect of curriculum changes on schoolhouse construction.

2524. Holmes, Stanley H. "Buildings and equipment for special activities in platoon schools." *Platoon Sch* 4:26-30, Mr-Ap-My '30. il

Discusses the platoon school needs of space and equipment for the auditorium, gymnasium, playground, music room, art room, science room, and library.

2525. Holmes, W. H. "Buildings that meet needs." *Platoon Sch* 5:22-3 D '31

Discussion of buildings fitted for the work of the platoon school. Special rooms and their equipment receive special attention.

2526. Holmes, Warren S. "Making the school building educate." *Am Sch Bd J* 76:47-8 Je '28. il

Caring for the child's interests by providing for his personal needs is discussed. A plea for schools as workshops. Schools are presented as illustrations.

2527. "Making the school building educate." *Am Sch Bd J* 78:52-3 Ja '29

A discussion of building needs as related to the educative process. The fitting of the building to the teacher and pupils is advocated.

2528. "School buildings for smaller communities." *Am Sch Bd J* 79:49-54 D '29. plans, il

Discussion of the problems of buildings in small communities. Examples are given illustrating the possibilities. Economies in organization are shown.

2529. Kirby, Byron C. "Planning a platoon school building." *Sch Executives M* 51:105-6 N '31

Presents 11 principles which should be kept in mind in making the layout for the platoon building.

2530. Koos, Leonard V. "The junior high school plant." In *The junior high school*, Ch. XIV, p. 468-83. Ginn and Co., New York City, 1927. plans, il

Discussion of the problem of separate housing for the junior high school, space provisions in junior-high-school buildings, illustrative floor plans, and the junior-high-school library.

2531. McNaughton, James Edgar. *Extended use of school buildings and grounds.* Master's Thesis, Ohio State Univ, Columbus, 1928-29

2532. *Midland Schools.* "Newton's platoon schools." *Midland Sch* 42:138, 154 D '27

A description of the Emerson Hough Grade building at Newton, Iowa, and of the way it is specially arranged to fit the platoon school.

2533. Moehlman, Arthur B. "A concrete problem in educational designing." *Nation's Sch* 1:29-32 My '28. il

A discussion of three phases of the building problem at Grosse Pointe, Michigan.

2534. *Nation's Schools.* "Planning the school building to conserve the pupil's health." *Nation's Sch* 5:71 Ja '30

Lists some features of school buildings and grounds that may tend to conserve the health of pupils.

2535. "Building schools for comfort and health." (ed) *Nation's Sch* 5:79-80 Ap '30

Discussion of the new realization of the importance of adequate schoolhouses as an integral part of education.

2536. Payne, H. D. "Lure and interest of the small schoolhouse." *Nat Assn Pub Sch Bus Officials* (Proc of 19th annual meeting) 1930:175-9

Discusses problems of providing enough variety in rooms in schools that are small because of scattered population. The grouping or combining of different grades of school and the multiple use of rooms are discussed.

2537. Phillips, Rose. "How Detroit would organize the Willard School." *Platoon Sch* 1:6-10 D '27

Describes the adaptation of the Willard School building of Long Beach, California, to the Detroit plan of platoon organization.

2538. *Pittenger, B. F. "Contemporary school needs affecting school plant and equipment." *Am Sch and Univ* 1929-30:27-30

Compares educational and architectural specifications and stresses the need of joint planning by specialists in each field. Discusses special provisions for special needs.

2539. Rice, Charles A. "How Portland would organize the Willard School." *Platoon Sch* 1:12-16 O '27. plans, il

A description of how the Portland, Oregon, platoon plan would work in the Willard School of Long Beach, California.

2540. Rosenthal, H. W. "The squad and leader system." *Chicago Sch J* 13:326-8 Mr '31

Sets forth a fine method of procedure for organized play, especially when time and space are limited.

2541. Rossman, John G. "How Gary would organize the Willard School." *Platoon Sch* 1:11-17 D '27. plans, il

Describes the adaptation of the Willard School building of Long Beach, California, to the Gary platoon plan of organization.

2542. "Planning buildings for platoon schools." *Platoon Sch* 2:150-4 D '28. plans, il

Points out the fundamental questions to be settled before it is possible to plan buildings efficiently for a platoon school organization and shows what provisions were required in Dayton, Ohio; Knoxville, Tennessee; and Birmingham, Alabama.

2543. "The present crisis and the platoon school." *Platoon Sch* 6:10-17 F '32. plans

Proposes some economies relative to the equipment and use of buildings to capacity. Shows plans for using, on a platoon basis, buildings already constructed according to other plans.

2544. Shepherd, H. P. "Some platoon school results." *Platoon Sch* 4:176-80 D '30. il

Gives among other things statistics on equipment, building maintenance, and financing platoon schools.

2545. Shigley, Arthur R. "Planning progressive schools for progressive education." *Nation's Sch* 2:25-30 O '28. plans, il

Description of a building planned to supplement the contributions of the teachers with appropriate environmental conditions.

2546. "Planning school buildings for flexibility in use." *Am Sch and Univ* 1929-30:81-3 plans, il

Some suggestions for building construction that will make buildings adaptable to changes that may come in future years.

2547. "A school building unit and how it simplifies construction." *Nation's Sch* 8:57-60 F '32

Building by the unit is here shown to be an economy measure and an undoubted aid to achieving flexibility in the modern schoolhouse.

2548. Smith, Dora V. *Class size in high school English.* Univ of Minnesota Press, Minneapolis, 1931. 309 p.; reviewed in *Am Sch Bd J* 83:90, 92, 95 Jl '31

A study carried on in the ninth-year English classes of University High School at University of Minnesota giving additional data on the fact that measurable results of instruction bear little observable relationship to the size of class, and suggesting that further studies need be made in this field.

2549. Smith, E. R. "Modern buildings for new schools; reply, with rejoinder." *Survey.* 67:221 N 15 '31

Defends the policy of building schools for service rather than for the sake of splendid architecture.

2550. Spain, Charles L. "Scientific educational planning of school buildings—abstract." *Bul of Dept of Supt of the N.E.A.* (Official report) 1930:201

Discussion of the waste attendant upon expenditure of large sums for buildings which are beautiful pieces of architecture but poorly planned educational plants.

2551. Spaulding, Francis T. "Difficulties due to housing and equipment." In *The small junior high school,* Ch. IX, p. 131-9. Harvard Univ Press, Cambridge, 1927

Special building and equipment requirements for the work of the junior high school are pointed out and several small Massachusetts junior high schools are evaluated in terms of these requirements.

2552. Stocking, William R., Jr. "The house principal and the house system in the Detroit high schools." *Jr-Sr H Sch Clearing House* 4:295-6 Ja '30

Discusses the house system of high-school organization and compares it to the home room system. Gives information that will assist in planning buildings in which this plan would be used.

2553. Ward, David A. "Construction of buildings for the platoon school." *Am Sch and Univ* 1929-30:91-3. plans

Discusses the type of building necessary for the platoon type of organization. Stresses auditorium, play facilities, and library.

2554. Whiteneck, Hosea A. "How the platoon units in the Long Beach city schools are used and planned." *Am Sch and Univ* 1930-31:311-15. plans, il

Discusses construction and plan of buildings particularly adapted to platoon schools and gives rules for planning such.

2555. Woglom, R. S. "Criteria for the home-room." *H Sch Teach* 7:270-2 S '31. bibliog

Among other things, shows the relation of the room and its equipment to desirable results in the home-room.

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PUBLICITY FOR THE BUILDING PROGRAM

2556. Alexander, Carter. "Presenting floor plans to the public." *Am Sch and Univ* 1932-33:56-7

Presents a novel device to acquaint the public with the plans of a proposed school building.

2557. Allen, William H. "Irrigation vs. cloudburst in getting money." *Am Sch Bd J* 77:74, 76 Jl '28
Discussion of the need for educating the people in the matter of granting school expenditures by giving them facts.

2558. *American School Board Journal.* "Modern means and types of school publicity." *Am Sch Bd J* 76:91 Ja '28
Discusses various desirable means of securing informative publicity for public schools.

2559. "Why some school bond issues have failed." (ed) *Am Sch Bd J* 76:68-9 Je '28
States reasons for the failure of some bond issues and gives examples.

2560. "Los Angeles school-bond collapse." *Am Sch Bd J* 77:56 Ag '28
An analysis of the refusal of the voters of Los Angeles to approve a proposed bond issue of $29,400,000.

2561. "How Quincy carried the school bond issue." *Am Sch Bd J* 77:96 D '28
Story of the way in which a bond issue vote was "put over."

2562. Campbell, Helen Stanton. "The public schools and public indifference." *Am Sch Bd J* 77:43-4, 152 N '28
Discusses the following topics: the school a big business; low taxes and false economy; timely purchase of school sites; conflict over building programs; school bond campaigns; and others.

2563. Cooper, Frank Irving. "Publicity for new school-building projects." *Am Sch and Univ* 1932-33:21-3
Discusses the need for an organized publicity campaign, informational in character and free from personal and political considerations.

2564. Garlin, R. E. "Factors conditioning the success of school surveys." *Sch and Soc* 28:337-40 S 15 '28
Report of a study showing factors which have contributed and those which have hindered the success of school surveys in 48 cities and 21 states.

2565. "Interesting the public in the school survey." *Nation's Sch* 5:21-4 Ja '30
A study of the best ways of acquainting the citizens with their schools. Survey publicity practices in 21 states and 48 cities are used as a basis.

2566. Greene, G. W. "Voting school bonds during period of depression." *Am Sch Bd J* 82:58 Ap '31
Story of the way in which a bond issue was carried in Anacortes, Washington.

2567. *Mochlman, Arthur B. *Public school relations.* Rand McNally and Co., Chicago, 1927. 262 p
A general discussion of the principles underlying informational service in the public schools and a technique for practical use.

2568. Otto, F. F. "Procedure in the Downey Union Junior High School bond election campaign." *Sierra Educ News* 25:29 F '29
Story of the procedure in the campaign to secure the Downey Union funds.

2569. Sellers, James E. "Successful bond election publicity." *Am City* 38:153 Ap '28
Discussion of the reasons for bond election failures and some suggestions for reaching the voters properly.

2570. Tupper, Charles R. "How a research department may aid a bond campaign." *Nation's Sch* 3:21-6 Mr '29. graphs
Altho hardly a research study, this article illustrates one of the practical uses of research.

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BUILDING COSTS

2571. *American School Board Journal.* "Increase in school-building costs." *Am Sch Bd J* 75:51-2 N '27

Summary of a survey by the U. S. Bureau of Education relative to building costs.

2572. "School costs in their relation to general municipal costs." (ed) *Am Sch Bd J* 76:90 Ja '28

Discusses the causes for the increase in the proportionate amount spent for schools.

2573. "A standard method for calculating cubage of school buildings." *Am Sch Bd J* 78:68 Ap '29

Definition and interpretation of "standard cubic contents."

2574. "New low level of school-building costs at Pottsville, Pennsylvania." *Am Sch Bd J* 83:58 O '31

States that fire-resistive construction obtained in the new $737,000 high-school building at Pottsville cost 27¢ per cubic foot.

2575. "School-building costs in Michigan." *Am Sch Bd J* 83:79 O '31

Costs of a large number of Michigan schools are given.

2576. Buchholz, H. E. "More money for less education." *Am Mercury* 16:271-8 Mr '29

An indictment of the mounting costs of education, including the cost of school buildings. Compares costs of 1900 with those of 1926.

2577. Chadwick, Cecil C. "Costs of nine new school buildings in Newton." *Am Sch and Univ* 1930-31:65-6

General description and cost study of some new school buildings in Newton, Massachusetts.

2578. Clark, Harold F. "School building cost index." *Am Educ Digest* 48:156-7 D '28. chart

Beginning of a series of articles on school building costs, which is continued in the *School Executives Magazine.* A cost index for a number of materials is developed.

2579. "School building index." *Sch Executives M* 48:203-4; 262; 311; 358; 404; 450; 500; 549 Ja, F, Mr, Ap, My, Je, Jl, Ag '29. charts, tables

Series of articles showing the trend of school building costs.

2580. Clark, Harold F. and Buros, Oscar K. "Index of school building prices." *Sch Executives M* 49:7; 102; 133; 196 S, O, N, D '29

Series of articles showing the trend of school building costs.

2581. Clark, Harold F.; Buros, Oscar K.; and Fowlkes, John Guy. "Index of school building and school supply prices." *Nation's Sch* 5:69-71; 71-3 Ja, Mr '30

Shows the trend of costs.

2582. Dorman, George E. "School-construction costs." *Am Sch Bd J* 80:68-9, 153 Ja '30

Points out that school construction costs are dependent upon (1) the economic standards of the day and generation; (2) the social ideals, reputation, and financial standing of the community; (3) the program of the building; (4) the design; (5) the materials of construction; and (6) the relative amount of construction in progress at the time the contracts are let.

2583. Frostic, Fred and Lovejoy, Philip. "Variables in comparative public school cost accounting." *Nation's Sch* 6:68-75 Jl '30

A comparison of variable factors used in comparisons to determine the efficiency of the public schools and some suggestions for standardizing them.

2584. Ganders, Harry S. "Budgeting equipment for a new building." *Am Sch Bd J* 79:44 Jl '29; also under title "Equipment budgeting." *Am Sch and Univ* 1929-30:30-1

Shows the need for considering equipment before finances are all consumed in the building. A procedure for equipment budgeting is given.

2585. Jones, S. H. and Misner, F. M. "Planning the budget for a new school." *Sch Executives M* 51:307 Ja '32

Presentation of a budget plan on a percentage basis which covers the following items: cost of bond issue, educational consultant, choosing a site, choosing an architect, survey of site, test drillings, educational equipment, budgeting contracts, architects' fees, playgrounds and landscaping, inspection, insurance, and dedication.

2586. Monahan, A. C. "The trend in building costs." *Am Sch Bd J* 83:74 Ag '31

Table showing indexes of building materials and construction costs from 1913 to 1931.

2587. Morse, Herbert N. and Anderson, Charles D. "Methods of computing and comparing school-building costs." *Am Sch and Univ* 1929-30:22-5

Lists the factors which affect costs and gives three methods for determining unit costs. Stresses particularly the New Jersey formula. Gives cost data for 15 typical schools.

2588. National Education Association, Department of Superintendence. *School building costs in 20 cities over 250,000 in population.* Dept of Supt of the N.E.A., Educ Res Service Circular, no. 10, 1928. planographed, 16 p

Indicates the size, cost, and special facilities provided for 58 elementary, 5 special, and 32 junior- and senior-high-school buildings. It is based on the questionnaire issued in October, 1927.

2589. Pugh, Jesse J. "A study in pupil costs of buildings." *Am Sch Bd J* 83:40, 104, 106 S '31

Description of the method of computing the cost of each unit of building on the basis of pupil utilization.

2590. *School and Society.* "Expenditures for school buildings." *Sch and Soc* 32:222-3 Ag 16 '30

Report of Dr. Leo Wolman showing expenditures for school buildings in 14 American cities as compared with expenditures for other types of public works.

2591. *School Executives Magazine.* "Lower construction costs." *Sch Executives M* 50:471 Je '31

Questionnaire study of 140 school districts made by the Better Schools League of Chicago, revealing a marked lowering of construction costs.

2592. Shigley, Arthur R. "Acquainting the layman with school building costs." *Nation's Sch* 5:39-43 Mr '30

A discussion of school-building costs and their variations.

2593. State of New York: Special Joint Committee on Taxation and Retrenchment. *Construction of school buildings in the towns and smaller cities of New York.* Legislative Document no. 60, J. B. Lyon Co., Albany, 1929. 80 p

A detailed committee report including a survey of current practice and the conclusions and recommendations. Pages 27 to 28, 40 to 41, of this report are reprinted in *The Architectural Record*, volume 66, pages 286 to 287, September, 1929.

2594. Vincent, Joseph Johnson. *The cost of elementary school buildings in Texas.* Master's Thesis, Univ of Texas, Austin, 1929

2595. Walsh, H. Vandervoort and Saxe, Alexander T. "Cubic foot estimating." *Am Arch* 139:42-3, 104-5 Ap '31. il

Instruction for figuring properly the cubic footage of a building.

Cross-index

17	461	912	2266
23	485	1200	*2270
32	500	1221	2281
69	501	1241	2364
89	507	1250	2497
95	508	1278	2512
136	509	1295	2520
267	510	1365	2597
277	511	1398	2616
284	680	1697	2650
294	682	1724	2656
297	693	1773	2660
347	759	1778	2794
364	833	1804	4256
372	844	2229	
381	853	2258	

THE ABILITY OF THE COMMUNITY TO FINANCE THE BUILDING PROGRAM

2596. Grossnickle, Foster E. *Capital outlay in relation to a state's minimum educational program.* Columbia Univ, Teach Col, Contr to Educ no. 464, New York City, 1931. 67 p

Presents a formula to be used to determine the ratio between debt service and current expense when the minimum program is in excess of $3,000 per teacher unit.

2597. Moehlman, Arthur B. "Financing the school plant program economically." *Nation's Sch* 8:76, 78, 80, 82 N '31

Considers cost of site, cost of building and equipment, other financial obligations, and ability of the community to pay.

2598. *School and Society.* "Finances of the Boston school system." *Sch and Soc* 31:498 Ap 12 '30

Discussion of the finances of the Boston school city and its effect upon the building program.

2599. Soper, Wayne. "Forecasting school revenues." *Sch Executives M* 48:339-41, 368, 370 Ap '29

A discussion of the need for determining school revenue needs as a basis for administering school finances. Directions for careful analyses of needs are given.

2600. Tibbetts, Keim Kendall. *The financial condition of the public schools at Wheaton, Illinois.* Master's Thesis, Univ of Chicago, 1931. 125 p

A study reporting the bonded indebtedness and school buildings of Wheaton, and a comparison with neighboring communities.

Cross-index

89	296	2368	2786
267	485	2372	2894
277	2270	2382	
280	*2273	2639	

SCHOOL BONDS AND OTHER METHODS OF FINANCING THE BUILDING PROGRAM

2601. *American School Board Journal.* "Pay-as-you-go policy at Denver." *Am Sch Bd J* 75:55-6 N '27
Shows the effect of the action of the state tax commission on the Denver pay-as-you-go policy.

2602. "Detroit's school finance problem." *Am Sch Bd J* 77:43, 153 Jl '28
A presentation of Detroit's school indebtedness problem.

2603. "School building financing and the pay-as-you-go plan." (ed) *Am Sch Bd J* 77:71 Jl '28
Defends the pay-as-you-go plan as opposed to any type of deferred payment plan.

2604. "Expediency of school bond issues." *Am Sch Bd J* 77:42 S '28
A statement by a school board president on the advisability of bond issues as opposed to the pay-as-you-go plan.

2605. "School bonds *vs.* pay-as-you-go plan." (ed) *Am Sch Bd J* 83:62-3 S '31
Points out the fact that the earning power of money while in the hands of taxpayers has been neglected in consideration of the bonding costs.

2606. "Public-school reserve funds." *Am Sch Bd J* 83:95-6 S '31
Review of the outstanding points in a study by Frank C. Ketler. Deals with (1) the interim reserve, (2) the building reserve, (3) the sinking fund reserve, (4) the insurance reserve, and (5) the contingency reserve.

2607. "Pay-as-you-go school financing." *Am Sch Bd J* 83:55 O '31
Experience of Shreveport, Louisiana, with the pay-as-you-go plan.

2608. Baker, J. Odell. "The administration of the Arkansas equalization fund." *Nat Council on Schoolhouse Construction* (Proc of 8th annual meeting) 1930:23-6
Tells how the cigar and cigarette tax works in Arkansas and how it affects the building program.

2609. Black, Charles. "Then and now in school finance." *Am Sch Bd J* 76:101, 174 Ja '28
Discusses "sharp practices" formerly existent in the handling of school bonds and compares former practices with present practices.

2610. Bruce, Frank. "Bonded indebtedness for school systems." *Am Sch Bd J* 77:57-8, 136 Ag '28
A discussion of the school finance problem and the different commonly used methods of financing.

2611. Bucher, H. M. "The issuance of school bonds." *Am Sch Bd J* 80:50, 162 Ja '30
Presents the precautions which, when taken, should enable the school board officials to avoid serious mistakes in the issuance of school bonds.

2612. Childs, Leslie. "Right to reimbursement of persons advancing money for school building." *Am Sch Bd J* 81:36, 136 O '30
Review of a case in Missouri in which a group of men loaned to the school district $11,500 to complete the construction of a school building after the constitutional limit of indebtedness was reached. The appellate court ruled that the amount could not be recovered. The author points out that conflicting decisions have been made in various states and shows the need for expert legal advice before such a method is employed.

2613. Clark, Harold F. "Index of school bond prices." *Modern Pub Bldgs* 2:31; 32 Ja, F '28
Prediction of bond prices for 1928, on the basis of the November and December, 1927, prices.

2614. "Measuring changes in school bond prices." *Fifteenth annual conference on educational measurements*, Indiana Univ, Sch of Educ, vol 4, bul no. 6, p. 15-23, Bloomington, Jl '28

Discusses the making of an index of school bond prices.

2615. "Selling school bonds." *Am Sch and Univ* 1928-29:31-2

Suggests things school officials should know and do to sell school bonds well.

2616. "Index numbers in educational work." *Teach Col Rec* 30:453-60 F '29

Gives index numbers for cost of living for school teachers, price of school buildings, price of school bonds, and the price of instructional supplies.

2617. "Index of school bond prices." *Am Sch Bd J* 76:185-6; 123-4; 64; 65; 67; 67 Ja, F, Mr, Ap, My, Je '28; 77:69; 61; 66, 151; 68, 128; 64; 59, 121 Jl, Ag, S, O, N, D '28; 78:90, 174; 68, 150; 66; 66, 156; 70, 147; 72, 146 Ja, F, Mr, Ap, My, Je '29; 79:72; 68; 68, 118; 62; 94, 98; 115-16, 118 Jl, Ag, S, O, N, D '29; 80:68; 136; 104; 142; 80 F, Mr, Ap, My, Je '30; 81:70, 94; 61; 70; 64; 64; 64 Jl, Ag, S, O, N, D '30; 82:126; 66; 66 Ja, F, Je '31; 83:63; 64; 58; 58 Jl, S, O, N '31

A series of articles showing the trend of school bond prices. In some of the articles there is a graph showing this trend over a 12-month period. Radical changes are accounted for and predictions for the future are made.

2618. Doughton, Isaac. "Dehorning a dilemma—the Troy plan of financing school construction." *Am Sch Bd J* 76:46-8, 130 Ap '28. il

Story of the development of the Troy finance plan. The plan is given in detail. The attitude of the courts is discussed. Examples of other schools using this plan are noted.

2619. *Essex, Don L. *Bonding vs. pay-as-you-go in the financing of school buildings.* Doctor's Thesis, Teach Col, Columbia Univ, New York City, 1930. 101 p.; also summary under title "Bonding versus pay-as-you-go." *Am Sch Bd J* 83:37-8, 108, 111; 39-40, 92; 55 Ag, O, N '31

Data show that neither bonding nor pay-as-you-go adheres to the principles established under all circumstances; each is fair and just under certain conditions and unfair and unjust under other conditions. Suggests that, with a carefully planned long-term budgeted program of all municipal improvements, the pay-as-you-go plan may be used in full or in part with little or no increase in taxation.

2620. Fowlkes, John Guy. "The failures of recent school bond issues analyzed." *Nation's Sch* 7:90, 92, 94 Je '31

Results of a questionnaire study conducted among school corporations in the North Central states.

2621. "Why school bond issues fail." *Nation's Sch* 8:86, 88 Jl '31

An analysis of the causes for school bond issue failures, 1928 to 1930, in 164 North Central school districts.

2622. Gesell, G. A. "Cleveland School Board adheres to pay-as-you-go." *Nat Municipal R* 19:697-9 O '30

Explains the school building finance plan of Cleveland, how it was affected by the Smith law of 1912 and the legislation of 1925.

2623. Gift, E. B. "Financing school building programs." *Educ Adm and Sup* 17:624-9 N '31

Discusses the financial program of Manhattan, Kansas, in relation to a building completed in 1925-1926.

2624. Goodrich, T. V. "Financing the building program in Lincoln, Nebraska." *Neb Educ J* 11:142-4 Mr '31. il

2625. Gwinn, Joseph M. "Financing school buildings." *Sierra Educ News* 24:6-7 D '28

A discussion of a number of methods of paying for school buildings and the conditions under which each should be used.

2626. Halsey, Henry Rowland. *Borrowing money for the public schools.* Columbia Univ, Teach Col, Contr to Educ no. 368, New York City, 1929. 127 p
Discusses among other things borrowing money for public school use and issuing bonds.

2627. Holy, T. C. "School bond issues in Ohio for 1928, 1929, and 1930." *Am Sch Bd J* 82:63, 115, 116 Je '31
General summary for the state, showing population and economic factors in successes and failures.

2628. Howarth, Walter Everett. *Bonded indebtedness for public schools in cities of the United States with a population of over one million.* Doctor's Thesis, Temple Univ, Philadelphia, 1930. bibliog, 110 p
A study of the revenues and expenditures of large cities and of the trend of the net debt over a period of 17 years. The cities studied are New York, Chicago, Philadelphia, Los Angeles, and Detroit.

2629. Hunt, H. S. "A comparison of two methods of school financing." *Am Sch Bd J* 77:46-7 N '28
A comparison of the bonding and pay-as-you-go plans of financing.

2630. Johns, R. L. and Holmstedt, R. W. "Equalization of serial bond payments." *J Educ Res* 17:20-9 Ja '28
Details of a plan which permits convenient handling of bond payments in equal payments of principal and interest.

2631. Ketler, Frank C. "A justification of credit financing in school-building construction." *Am Sch and Univ* 1931-32:25-6
Criticizes the pay-as-you-go plan and lists the disadvantages of reserve fund financing. The advantages of credit financing are presented.

2632. Miller, Glenn Eugene. "School bonds issued in the state of Nebraska, 1920-28." *Educ Res Rec* 2:153-63 Ap '30. tables, fig
Report of a study made of the 743 school bond records in the office of the State Auditor of Public Accounts for the period 1920 to 1928.

2633. *Nation's Schools.* "Three ways of paying for school buildings." *Nation's Sch* 5:54 Ja '30
Compares briefly the bond, pay-as-you-go, and depreciation plans of paying.

2634. "The pay-as-you-go plan for capital costs." *Nation's Sch* 5:24 Mr '30
A discussion of the pay-as-you-go plan by Lent D. Upson, director, Detroit Bureau of Governmental Research.

2635. Otto, C. W. "Building schools without bonds." *Am City* 42:97-8 Je '30. il
Story of how Lansing, Michigan, has built its schools on the pay-as-you-go basis.

2636. Patty, W. W. and Malan, C. T. "The school holding company dilemma in Indiana." *Am Sch Bd J* 80:65, 127 Mr '30
Discussion of the need for increased physical equipment, of the formation of holding companies, of the financial limitations of communities, and of the final defeat of the law providing for holding companies.

2637. Pruett, Haskell. "Report of the work of the Interstate School Building Service for the past year." *Nat Council on Schoolhouse Construction* (Proc of 8th annual meeting) 1930:12-15
Tells of the financing of school projects in the South and of the types of buildings commonly provided.

2638. Soper, Wayne. "Amortizing school indebtedness." *Sch Executives M* 49:78-80, 93 O '29
Discusses justifiable indebtedness and the merits and disadvantages of different kinds of bonds.

2639. Sorensen, R. R. "How the Tracy school district financed a building program." *Am Sch Bd J* 84:49 Mr '32

Discusses a finance plan thru building funds carried out over a ten-year period at Tracy, Minnesota.

2640. State of Texas. *Independent school districts: tax and bond forms.* State Dept of Educ, Attorney General's Dept, vol 4, no. 3 (bul no. 284), Austin, Ap '28. 26 p

Contains the legal forms for the complete procedure of issuance of bonds for schoolhouse construction purposes.

2641. Upson, Lent D. and Rightor, C. E. "Standards of financial administration." *Nat Municipal R* (Supplement) 17:117-32 F '28

Section III sets up several general standards for financing permanent improvements.

2642. *Weber, O. F. "Legitimate function of public school bonds." In *Problems in public school administration*, p. 628-70. The Century Co., New York City, 1930

A general discussion of school bonds, their uses, and administration.

2643. Wynkoop, John B. "Financing new school construction." *Sch Executives M* 50:8-10, 41 S '30; also *Nat Assn Pub Sch Bus Officials* (Proc of 9th annual meeting) 1930:200-9

Discusses serial bonds, direct taxation, insurance, contingency funds, short term notes, and economy in construction thru standardization.

Cross-index

26	414	*2273	2780
61	525	2276	2786
89	538	2388	2904
280	545	2412	2905
287	625	2438	*4234
289	*629	2560	4516
293	872	2569	
327	*2270	2687	

ECONOMIES IN THE BUILDING PROGRAM

2644. *American School Board Journal.* "An argument for large school buildings." *Am Sch Bd J* 77:82, 84 Jl '28

Report of a study by W. C. McGinnis, superintendent of schools, Revere, Massachusetts, of large *vs.* small school buildings in the matter of janitor service.

2645. "What must the school building dollar yield?" *Am Sch Bd J* 78:66 F '29

Discusses the need for proper economy in school-building construction. Recommends some checks on construction for large or small units.

2646. "Cheap schoolhouse construction." *Am Sch Bd J* 83:48, 92 D '31

Suggestion that schoolhouses built to last 20 years are substantial enough.

2647. "The waste in school architecture." (ed) *Am Sch Bd J* 82:65 Mr '31

Discusses the need for careful planning to care for the present-day needs without wasteful expenditure.

2648. *Architectural Forum.* "Economies of school structure as exemplified by the Chadsey High School, Detroit, Michigan." *Arch Forum* 55:733-7 D '31. il, diag

Story of the construction of the Chadsey High School, showing economies effected in different phases of the work. Three types of construction are discussed: completely wall bearing; wall bearing exterior walls, with interior frame of steel concrete columns; and skeleton construction, with masonry curtain walls.

2649. Betelle, James O. "Planning for multiple use." *Arch Forum* 55:644-8 D '31. plans, il

Shows how school construction costs may be kept low by greater flexibility in planning so that multiple use of rooms may be exercised. Community use of school buildings is urged and provision for this in planning is suggested.

2650. Dorman, George E. "Cutting school-building construction costs." *Am Sch Bd J* 82:43-4 Je '31

Illustrations of points at which economies may be brought about in the building program. Underbuilding, overbuilding, lack of balance, unsuited type of plan, and too great or too little permanence are factors discussed.

2651. Engelhardt, N. L. "Financial economies which may be effected through improved business administration." *Sch Executives M* 51:99-101, 132, 136 N '31

Discusses economies possible in architectural service, specifications, interior planning, insurance, sites, and equipment.

2652. Goodrich, T. V. "How 135 superintendents reduced school costs." *Sch Executives M* 51:243-5, 270 F '32

Examples of ways in which school superintendents saved in insurance, maintenance, and capital outlay.

2653. Hacker, Myra C. "A high school of note." *Am Sch Bd J* 80:49, 140, 142 Ja '30. plans, il

A good discussion of points at which wastes may be reduced precedes a description of the Teaneck, New Jersey, high school.

2654. Holy, T. C. "Economies of good schoolhouse planning." *Ohio State Educ Conf* (Proc of 10th annual session) 1930:483-4

Lists 11 of the most important economies that can be effected by proper schoolhouse planning.

2655. Ittner, William B. "Schoolhouse planning." *Am Educ Digest* 47:213 Ja '28

Discussion of waste due to poor planning before building and the need for a thoro investigation by educational experts prior to construction.

2656. Johnson, Virgil L. "An achievement in school construction." *Am Sch Bd J* 76:60-7 Ja '28. plans, il

Story of how Philadelphia has reduced construction cost without sacrificing architectural beauty. Descriptions of several of the buildings are given.

2657. Lehrbach, Henry G. "Economy in the planning and construction of school buildings." *Am Sch Bd J* 84:48-9, 106, 108, 110 Ja '32. plans, il

Points out ways to economize at the various stages in the development of the building program.

2658. Llewellyn, Joseph C. "Economy in elementary school buildings." *Am Sch Bd J* 80:39-43 Ja '30

Points out the principal ways in which economy may be practiced in the construction of school buildings.

2659. Lovejoy, Philip C. "Miscellaneous expenses that may be reduced to save money." *Nation's Sch* 8:90, 92, 94 Jl '31

Economies pointed out include attention to plumbing fixtures, broken glass, lights, power, laundries, and insurance.

2660. Moore, Susa P. "Detroit lowers its school costs." *Am Sch Bd J* 82:56, 134 F '31. il

Discusses the two factors that go to make up economy in school costs: (1) ceilings used are of poured-concrete-slab construction 8" to 12" thinner than ordinary floor and ceiling, saving thousands of cubic feet of space; and (2) *cinder blocks* are used for interior walls and as inside facing of exterior walls. The Williams and Marshall schools, with many new economical features, are described.

2661. *Nation's Schools.* "How one city saved $265,000 on its school building program." *Nation's Sch* 6:88 S '30

Tells how Boston, Massachusetts, has made this saving.

2662. North, Arthur T. "Architects must study building economics." *Am Arch* 136:28-9, 92, 96 O '29

Presents the responsibility of the architect in the matter of building economics. Suggests these five: (1) What kind of building will fit the site? (2) What should be its plan and construction? (3) How should its financing be handled? (4) What revenue will it bring? (5) How shall it be operated and maintained?

2663. Ritchie, R. R. "How and where to economize in secondary education." *Bul of Dept of Sec-Sch Prin of the N.E.A.* (Proc of 14th annual meeting), no. 30, p. 45-53, Mr '30

Points out the lack of reasonable standardization, poor utilization of the plant, poorly designed service systems, and ornate architecture as economic wastes.

2664. Sailor, Christian Frank. *How long do school buildings last: A historical study.* Master's Thesis, New York Univ, New York City, 1930

2665. *School.* "New York's school buildings are honest, safe, efficient, and appropriate." *Sch* 39:429-31 F 2 '28

Report of a study of the school building situation in New York City made by a joint committee of the American Society of Civil Engineers and American Institute of Architects.

2666. Waldo, K. D. "Common errors in high school building layouts." *Sch Executives M* 50:547-9, 575-6 Ag '31

Topics discussed are: educational needs, size of classrooms, community needs, types of buildings, basement, corridor problems, types of construction, provision for expansion, location of administrative units, science laboratories, and stage and gymnasium facilities.

Cross-index

27	598	1701	2796
68	636	1704	3781
*69	682	1706	3807
89	683	2158	3808
138	776	*2281	3877
269	881	2350	4056
280	920	2314	4227
284	1078	2319	4235
327	*1181	2322	4246
364	1199	2489	4269
365	1280	2528	4394
369	1343	2536	4503
437	1379	2547	
454	1405	2549	
540	1626	2550	

VI. Individual Relationships and Responsibilities

2667. *American School and University.* "Books and pamphlets issued by state departments of education with special reference to school-building planning and construction." *Am Sch and Univ* 1929-30:444, 448

Lists, by states, books mentioned in title.

2668. "Participation of state departments of education and other state agencies in planning and supervising local school-building development." *Am Sch and Univ* 1930-31:548-51

Statement of participation by each state in local school-building programs.

2669. "Participation of state agencies in planning and supervising local school building development." *Am Sch and Univ* 1931-32:499-502

Summarizes for each state the work of the state in the control and supervision of school-building construction.

2670. *American School Board Journal.* "The planning of schoolhouses in California." *Am Sch Bd J* 76:110 Ja '28

States the organization and policies of California's department in checking building plans for schools outside larger cities.

2671. "School building service in Wisconsin." *Am Sch Bd J* 80:78 Ja '30

States that the State Department of Public Instruction, under a working arrangement with the State Industrial Commission which is officially charged with the approval of school building plans, receives all school plans for suggestive checking and for constructive criticisms. New plans with specifications are worked out and service is rendered free to all who care to avail themselves of state service.

2672. "State architectural service for schools." *Am Sch Bd J* 82:138 Ja '31

Discussion of the extent to which state departments should supply architectural service to local schools.

2673. "School buildings and state bureaus." *Am Sch Bd J* 82:68 F '31

The nature, scope, and policy of the Wisconsin State Department is briefly explained in answer to an article by William J. Sayward in the *Octagon*, official organ of the American Institute of Architects.

2674. "Safe and sanitary schoolhouses." *Am Sch Bd J* 84:68 Mr '32

A list of the nine functions of the bureau on buildings and grounds maintained by the State Educational Department of Kentucky.

2675. Barrows, Alice. *National advisory council on school building problems; its organization, purposes, and methods*, p. 1-5. U. S. Office of Educ, pamphlet no. 7, Jl '30

States the purposes and tells of the organization of the National Advisory Council on School Building Problems. Also tells why the council was organized on the basis of geographical units and shows the connection with the U. S. Office of Education.

2676. "Council formed to study school building problems." *Sch Life* 16:115-16 F '31

Tells of the work of the National Advisory Council on School Building Problems.

2677. *Beach, Wilfred W. "Supervision of construction operations." *Arch Forum* 50:139-44; 297-304; 629-36; 783-8 Ja, F, Ap, My '29; 51:125-31; 259-64; 559-66; 575-81 Jl, Ag, O, N '29; 52:149-50; 299-306; 631-4; 767-70 Ja, F, Ap, My '30; 53:133-6; 267-8; 523-30; 649-54 Jl, Ag, O, N '30; 54:129-36; 255-62; 517-22; 641-6 Ja, F, Ap, My '31; 55:121-4; 253-6; 521-4; 633-6 Jl, Ag, O, N '31; 56:106-9; 211-14; 418-23 Ja, F, Ap '32

A good discussion of the "Supervision of construction operations," including chapters on: The duties of superintendents; superintendents, records; the first day on the job; beginning the work; contract changes; foundations and masonry materials; form work; concrete work; concrete reinforcements and other built-in members; waterproofing and dampproofing; finished concrete surfaces; roughing-in by pipe trades; job progress; masonry; terra cotta, cut stone, and pre-cast stone; structural steel; miscellaneous metal work; structural carpentry; roofing and sheet metal work; furring, lathing, and plastering; marble and tile; finish carpentry; finish hardware; glass and glazing; painting and varnishing; electric work; heating and ventilating; plumbing; and completion and acceptance.

2678. Bristow, William H. "Reorganization of secondary education under state supervision." *Sch Life* 14:173-5 My '29

A comparison of the junior-senior and four-year high schools in Pennsylvania. Buildings and equipment are items considered.

2679. Cooper, William John. *Reasons for a national advisory council on school building problems*, p. 8-10. U. S. Office of Educ, pamphlet no. 7, Jl '30

Outlines the need for a clearing-house service on school buildings and suggests the U. S. Office of Education for this.

2680. Dempsey, Clarence H. "What is a satisfactory school?" *Nat Educ Assn J* 18:157-9 My '29. plans

Tells how Vermont has improved her rural schools. A copy of the official rating sheet for the Vermont rural schools is reproduced.

2681. Dresslar, F. B. "Organization of the interstate school building service." *Sch Life* 15:115-16 F '30. plans

Discussion of the work of the General Education Board, George Peabody College, and other organizations in assisting in planning scientifically constructed school buildings.

2682. Engelhardt, N. L. and others. "Participation of state departments of education and other state agencies in planning and supervising local school building development." *Am Sch and Univ* 1929-30:445-8

Shows by states the degree to which the state department of education has provided for coöperation.

2683. Graham, J. L. "What is the function of the state in school building programs?" *Nat Council on Schoolhouse Construction* (Proc of 8th annual meeting) 1930:17-23

Tells of the ways in which different states are taking part in the school building programs, how they have been able to get this position, and something of what they are accomplishing.

2684. Harvey, Clarence Wilmer. *State school building policy*. Master's Thesis, Univ of Chicago, 1929. 110 p

A study of 18 states in the central part of the country, in which it was found that there is no settled policy among the states as to what should be the minimum standards for school buildings.

2685. Hill, Andrew P. "Planning schoolhouses in California." *Sierra Educ News* 23:589-90 D '27

Sets out the purposes and activities of the department created by the Schoolhouse Planning Act in California.

2686. "The part which the state should play in schoolhouse planning." *Am Sch and Univ* 1929-30:33-9. plans

Discusses causes which have led to the establishment of state divisions of school planning. Lists different aspects of school planning service. A number of school plans are shown.

2687. "Report of the division of schoolhouse planning." In *Biennial Report* Pt I, p. 161-84. State of California, Dept of Educ, 1930

Description of the work of the Division, showing plot plans, discussing the development of standards both for public schools and colleges, and presenting suggestions on financing building projects.

2688. Julius Rosenwald Fund, The. *Community school plans.* The Julius Rosenwald Fund, Nashville, Tenn., 1931. plans, il, 39 p

Plans for community schools and brief suggestions on location, toilets, surfacing, landscaping, and care of the building.

2689. Ledbetter, R. E. "Ten years of progress in schoolhouse construction in Alabama." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:98-108. mim

Discusses results of a 1908 law in Alabama providing for the control of school-building construction by the State Department of Education.

2690. Long, Raymond V. "Policing [Policies] and state laws on school housing affecting state department of education." *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:22-41. ms

Discusses the development of attitudes and conceptions that have formulated policies and state laws centering around planning and construction of school buildings.

2691. *Nation's Schools.* "Council on building problems plans practical program." *Nation's Sch* 5:75 Je '30

Announcement of the formation of the National Advisory Council on School Building Problems by the U. S. Office of Education, and a statement of its purposes.

2692. Proctor, Arthur Marcus. *Safeguarding the school board's purchase of architects' working drawings.* Columbia Univ, Teach Col, Contr to Educ no. 474, New York City, 1931. bibliog, 138 p.; abstract under title "Checking architects' drawings for completeness." *Bul of the Dept of Supt of the N.E.A.* (Official report) 1932:66-72

Report of a study made of 110 sets of working drawings of school buildings erected in Missouri. For the use of a state department of education, requirements for working drawings have been set forth in the form of a code.

2693. Pruett, Haskell. "Interstate school building service." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:154-61. mim

Description of the organization of this service; the steps taken; the securing of funds; the services made available to state departments; and methods of collecting, editing, and publishing plans, specifications, and information.

2694. Schmidt, H. W. "The improvement of rural school buildings." *Nat Educ Assn J* 17:295-6 D '28

Description of the efforts of the State Department of Education in Wisconsin in improving rural schools.

2695. *School and Society.* "The Pennsylvania school buildings bureau." *Sch and Soc* 33:866-7 Je 27 '31

Statement of the achievement of the state bureau covering the 20 years of its existence. Copied from the *Pennsylvania School Journal.*

2696. Spain, Charles L. *Scientific educational planning of school buildings,* p. 17-22. U. S. Office of Educ, pamphlet no. 7, Jl '30

Discusses the function of the educational planner. Stresses the coöperation of the states in maintaining planning divisions.

2697. Taylor, James S. "Contributions of the Bureau of Standards to school building construction." *Bul of the Dept of Supt of the N.E.A.* (Official report) 1932:72-9

Describes the work of the Bureau in establishing standards.

2698. Williams, Frank. "Functions of the state department of education in schoolhouse planning." *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:74-84. mim

Discusses the extent to which state departments should give architectural service to schools of the state.

Cross-index

28	520	2270	2784
45	1687	2400	2790
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THE SUPERINTENDENT AND HIS STAFF

2699. Betelle, James O. "The superintendent of schools and the new school building." *Am Sch Bd J* 76:39-40, 177 Ja '28

Discussion by an architect of the duties of a superintendent in the building program.

2700. Brown, Wensel Langley. *The relationship of the superintendent and the architect to schoolhouse planning.* Master's Thesis, Univ of Illinois, Urbana, 1928

2701. Eells, Walter Crosby. "Are your school names an asset?" *Nation's Sch* 5:35-8 Mr '30

Gives results of a study of the names by which the public schools are known in the 68 largest cities in the country.

2702. Frewen, Frank W., Jr. "Collaboration in school architecture." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:70-3

Discussion of the need for clearing ideas relative to school building thru the architect. The value of the teacher, principal, superintendent, board member, and others in connection with planning and construction is shown.

2703. Hamlin, A. D. F. "Community thinks well of the schoolhouse." In *Readings in urban sociology*, by E. W. Bedford Scott, ed., p. 664. D. Appleton and Co., New York City, 1927

Discusses the responsibility of the board and superintendent for the proper attitude of the community toward its school buildings.

2704. Hunkins, Ralph V. *The superintendent at work in smaller schools*, p. 70-120. D. C. Heath and Co., Boston, 1931

Chapters IV, V, and VI deal with the relation of the superintendent to various phases of the building, such as building erection, equipment, and care and upkeep of school property.

2705. *Journal of the American Institute of Architects.* "New York's school buildings." *Am Inst Arch J* 16:72-4 F '28

Contains the report of the joint committee of architects and engineers appointed to investigate the school building difficulties in New York City.

2706. Nash, Raymond W. "The school superintendent and the new building program." *Am Sch Bd J* 84:80, 82 Ja '32

Lists inefficient results obtained when the superintendent does not supply the necessary information for the proper planning of buildings.

2707. Rawlins, Robert Ernest. *The function of the superintendent in connection with the detailed activities in the construction of a school building.* Master's Thesis, State Univ of Iowa, Iowa City, 1929. 327 p

2708. Wilson, Frederick L. "Things a school administrator may profitably know concerning school buildings." *Univ of Pittsburgh Sch of Educ J* 3:112-14 My-Je '28

Emphasizes the need for ability to read blueprints and legal provisions governing the construction of school buildings.

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84	442	*2270	2677
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THE SCHOOL BOARD

2709. *American School Board Journal.* "School-building practices in eastern cities." *Am Sch Bd J* 75:53-4 N '27

Report of a special committee of the Chicago Board of Education on a study of schoolhousing and construction in a selected group of cities. Nine recommendations are made.

2710. "The shake-up in the New York school-building department." *Am Sch Bd J* 76:70-1 F '28

Points out the need for eternal vigilance in the construction of school buildings.

2711. "The liability of a county school board for failure to require bond to protect laborers and materialmen." *Am Sch Bd J* 79:82 S '29

Report of a case in which the question was "Can a board of education be compelled to respond in damages for failure or neglect to take a bond as required by law?"

2712. "Relations between school architect and school board." (ed) *Am Sch Bd J* 82:64-5 Je '31

Discussion of the changes that have come about in these relationships and of the qualities of the modern school architect.

2713. "Relation of architects and boards of education." (ed) *Am Sch Bd J* 84:60 Ja '32

Discussion of the changes that have come about in the method of selecting school architects and the necessity for the selection of specialists by boards of education.

2714. *Architectural Forum.* "Selecting a general contractor." *Arch Forum* 56:192 F '32

Sets out the disadvantages in selecting a contractor solely on the basis of a comparative bid and suggests ways of eliminating such disadvantages.

2715. Donovan, John J. "From experience with school building committees." *Arch Forum* 55:691-2 D '31

Discusses the relations of architects and school boards.

2716. Dunning, Neal M. "Owner—the board of education." *Arch Forum* 55:769-71 D '31

Discusses methods of bringing boards of education and architects into touch with each other. The responsibility of the architect chosen is stressed.

2717. Edwards, I. N. "Legal authority of boards of education." *El Sch J* 30:431-3 F '30

Gives court rulings on the authority of the school board to insure school property.

2718. "Municipal control of school buildings." *El Sch J* 30:739-44 Je '30

Gives legal decisions affecting the relation between the school board and municipal authorities with respect to school buildings.

2719. Rough, Stuart Bates. *The powers and limitations of school boards to enter into capital outlay contracts in California.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. bibliog, 56 p.; abstract in *Annotated index of theses and dissertations in education*, p. 70. Sch of Educ, Univ of Southern California, Los Angeles, 1930

Constitutional provisions, school laws, and court decisions on this subject are analyzed and discussed.

2720. Smith, James Wilfred. *Judicial decisions relating to the contractual powers of school boards.* Master's Thesis, Univ of Chicago, 1927. 79 p.; abstract in *Bul of Dept Sec-Sch Prin of the N.E.A.*, no. 24, p. 20-2, Ja '29

A study of the principles of common law relating to the expenditure of money by school boards. The data were obtained from the state supreme courts and the Federal Supreme Court. Deals especially with contracts.

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THE ARCHITECT, ENGINEER, AND CONTRACTOR

2721. *American City.* "How shall the 'lowest and best' bidder for public works be selected?" *Am City* 38:125-7 Je '28

Excerpts from a memorandum submitted to the Comptroller General of the United States by the Associated General Contractors of America dealing with such questions as responsibility of bidder and qualifying in advance.

2722. *American School and University.* "Architects for educational buildings." *Am Sch and Univ* 1929-30:414-38

Lists, by states, architects who have designed outstanding school buildings.

2723. *American School Board Journal.* "The architect's code of ethics." *Am Sch Bd J* 75:52-3 N '27

Statement of the Principles of Professional Practice adopted by American Institute of Architects.

2724. "The mission of the modern school architect." (ed) *Am Sch Bd J* 76:90 Ja '28

States the mission of the modern school architect in the production of proper pupil-teacher housing.

2725. "Are certified checks an essential in school contract bidding?" (ed) *Am Sch Bd J* 76:69 My '28

Presents opposition to having certified checks accompany bids.

2726. "School boards and the lowest responsible bidder." (ed) *Am Sch Bd J* 77:71 Jl '28

Gives the Pennsylvania Supreme Court's definition of the "lowest possible bidder."

2727. "The general contractor in schoolhouse construction." (ed) *Am Sch Bd J* 78:65 Mr '29

Discussion of the plan of letting the contract to one contractor who deals with all sub-contractors. Advantages and disadvantages are presented.

2728. "Shall it be local or outside architects?" (ed) *Am Sch Bd J* 79:60-1 O '29

A discussion of the limitations of town pride in the matter of schoolhouse construction.

2729. "School contracts—lowest responsible bidder." *Am Sch Bd J* 80:77-8 F '30
Suggests a definition of the "lowest responsible bidder."

2730. "Choosing an architect." *Am Sch Bd J* 80:49, 131-2 Je '30
Presents some of the needs for an architect and suggests methods of choosing one. This is a summary of a report by the New Jersey chapter of the American Institute of Architects.

2731. "Professional practice in school buildings." *Am Sch Bd J* 81:63, 146 Jl '30
An appeal for a quantity survey of materials specified, special conditions, and quantity of labor to add definiteness to plans and specifications of proposed buildings.

2732. "Beyond the blue print." *Am Sch Bd J* 81:80 S '30
Lists and discusses seven vital qualities and services, intangible but essential for the success of architectural service.

2733. "School contractor's responsibility." *Am Sch Bd J* 82:70 Ja '31
Comments on the "Take public-school contracts and go broke!" phrase employed in a bulletin of the Credit Association of the Building Trades of New York, which recommended that legislation be secured whereby the subcontractor would enjoy the same security that now is accorded exclusively to the general contractor.

2734. "The unethical in school architectural service." (ed) *Am Sch Bd J* 82:69 My '31
Some problems of ethics related to educational experts and their relations to building programs.

2735. "Price and quality factors in school contracts." (ed) *Am Sch Bd J* 83:63 Ag '31
Discusses the necessity for boards of education to adhere to specifications listed in letting contracts.

2736. "Some school-building-contract considerations." (ed) *Am Sch Bd J* 83:57 N '31
States that school boards should make sure that surety bonds cover all subcontractors as well as the general contractor.

2737. Anderson, Homer W. "Architectural services in Denver." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:178-9
Discusses problems which confronted Denver in its recent building program and tells how they were solved. The working organization that handled the program is described.

2738. Beach, W. W. "'Or equal' again." *Pencil Points* 10:811 N '29

2739. *Betelle, James O. "What an architect does for his money." *Am Sch Bd J* 80:37-8 Ja '30
Discusses qualifications of the architect. Tells what preliminary work the architect does and how he directs and supervises the actual construction.

2740. Blake, Clinton H. "What to put in a contract." *Am Arch* 138:34-5, 92, 94 S '30
Suggests items which should become a part of the contract between the officials in charge and the architect.

2741. Bright, John Irwin. "The school and its architect." *Am Sch and Univ* 1928-29:15-16
Suggests considerations to be taken into account in the selection of an architect.

2742. Bush, E. W. "Letting construction work by competitive bidding." *Eng and Contr* 67:600-16 D '28
Gives valuable recommendations concerning competitive bidding.

2743. Butler, Charles. "School-building competitions." *Am Sch Bd J* 76:41-2 Ja '28
Selection of an architect on the basis of open competition is discussed. A jury of award makes the final decision.

2744. Child, G. N. "The school plant: its educational functions—abstract." *Bul of Dept of Supt of the N.E.A.* (Official report) 1930:206
Commends the work of architects of the past and urges the coöperation of architects and school authorities that the future may see improvements.

2745. Childs, Leslie. "Liability of a school district on a contractor's bond." *Am Sch Bd J* 83:58, 130 Jl '31
Discussion of the case of Fort Worth Independent School District *vs.* Aetna Casualty and Surety Company in Circuit Court of Appeals, Fifth Circuit, wherein the school board was held liable for the debts of the contractor for materials.

2746. Coburn, Ira W. "The construction of schools from a contractor's point of view." *Am Sch Bd J* 82:79, 82 My '31
Discusses the need for the architect in the building program, the importance of contracts, and the place of the superintendent in construction.

2747. Dalman, Murray A. "What shall we tell the architect?" *Am Sch and Univ* 1930-31:33-7. plans
Presents a number of questions which must be answered in planning a building and urges the coöperation of school men and architects.

2748. Engelhardt, N. L. "Buying school buildings." *Am Sch Bd J* 82:49-51 Ja '31
Discusses checking plans and specifications and reproduces a checking list for school building plans, devised in accordance with the Strayer-Engelhardt-Hart architect's form no. 4.

2749. *Engineering and Contracting.* "Standard construction contracts." *Eng and Contr* 67:97-9 F '28
Committee report presented at 1928 meeting of Associated General Contractors of America. Explains that the standard contract for building construction issued by the American Institute of Architects is not "something that the Associated General Contractors developed solely within its own ranks" and "is a development of the responsible elements of the architectural and engineering professions and the contracting business." Contractors are strongly in favor of the use of the Standard Documents. It is estimated that they are used in 125,000 projects a year.

2750. "Relationships between general contractors and sub-contractors." *Eng and Contr* 67:154-7 Mr '28

2751. Fitts, Joseph C. "Prequalification of bidder." *Heat and Piping Contr Nat Assn Official Bul* 38:33-4 O '31
Deals with the choice of contractors and the need for proper qualifications among them. The cost of bidding by poorly qualified and incompetent contractors is set out.

2752. Forbes, Russell. "Sureties with bids and contracts." *Am City* 39:113-15 Ag '28
Report of a survey of present practices as to sureties with bids.

2753. Garfield, Abram. "School-building competitions." *Am Sch Bd J* 82:60 Ap '31
Suggestions for the selection of a school architect.

2754. Gompert, William H. "Community interest in school building projects." *Am Sch Bd J* 82:86 Ja '31
Discusses the necessity for the careful selection of the architect and the contractor, lists the outstanding qualifications of the contractor, and discusses the danger points in the contract itself.

2755. Grossman, E. "Why specifications?" *Eng and Contr* 67:172 Ap '28
Discusses the qualities a specification should possess. Quoted from *Journal of Boston Society of Civil Engineers.*

2756. Higgins, Thomas J. "Check list for six-grades elementary schools." *Am Sch Bd J* 82:71 Ja '31
A list of 315 items to assist school authorities and architects in the preliminary studies of individual rooms in school buildings and in the checking of the final sketches and the working drawings.

2757. Holmes, Warren S. "The cost-plus system of letting contracts for schools." *Am Sch Bd J* 76:75, 162 Ja '28
A comparison of the fixed-fee basis and the fixed-sum as contract methods.

2758. Illinois Society of Architects. "Just what does an architect do for his client?" *Pencil Points* 10:866-7 D '29

2759. "Architectural advice—why take it?" *Am Sch Bd J* 80:62 Ap '30
Lists nine reasons why one should seek the services of an architect and be guided by his judgment.

2760. Kaufman, G. L. "Are architects obsolete?" *Pencil Points* 10:345 My '30
Discusses contemporary conditions affecting architectural practice.

2761. Llewellyn, Joseph C. "The business side of the architect's work." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:187-94
Discusses the many sides of the building program which must be understood by the architect. Among these are materials, legislation, estimating, letting of contracts, payments and waivers, and equipment.

2762. Ludlow, William Orr. "Selecting the architect." *Am Sch and Univ* 1930-31:32-3
Discusses ways of selecting architects and raises some questions to be answered about them.

2763. McGoodwin, R. R. "Architecture is changing and clients are responsible." *Am Arch* 138:54 D '30
Points out that the rôle of the architect has become re-creative rather than creative: re-creative in the sense that architecture must give full expression not only of the designer but also of the "self" of the family, business, industry, or institution which it is called upon to serve.

2764. Milligan, R. M. "Modern school architectural service." *Am Educ Digest* 47:149-51 D '27
A discussion of the responsibility of the school architect and the influence of building and site upon the training of the child.

2765. "The securing of school architectural service in St. Louis." *Ohio State Educ Conf* (Proc of 7th annual session) 1927:462-71
Explains the employment of architects, and discusses the responsibility of the architect, the standards set out by the board of education, and the costs of architectural service.

2766. *Nation's Schools.* "The school plan as seen by an architect." *Nation's Sch* 8:37 O '31
William B. Ittner's statement as to the work of the architect in developing the school plan.

2767. Reger, Carl. "Selecting school architects." *Am Sch Bd J* 82:89 My '31
Criticism of the activities of some architects.

2768. Schall, Howard S. "Is prequalification of bidders coming?" *Plumbers and Heat Contr Trade J* 90:30-1, 54 Je 15 '31
Consideration of qualifications necessary for the contractor to perform his agreement and suggestions for a prequalification agreement.

2769. Turner, H. C. "The selection of the builder." *Arch Forum* 53:522 O '30
Discusses the items of cost, planning, and time of completion in relation to the contractor. The qualifications of experience and past performance are also discussed.

2770. Twiner, H. C. "The selection of the builder." *Arch Forum* 53:522 O '30
Discussion of the elements which should enter into the selection of the builder.

2771. Vedder, James R. "The evils of employing inexperienced school architects." *Am Sch Bd J* 82:89 My '31
Criticism of the activities of some architects.

2772. Wooldridge, Charles L. "The function of the architect's program." *Am Sch and Univ* 1932-33:340-3. plans, il
Description of the work of the architect in planning the Boys' Trade School in McKeesport, Pa., thru a schedule of rooms and requirements and space studies.

2773. Wright, C. C. "The view of an architect on separate contracts." *Eng and Contr* 67:187-9 Ap '28

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THE EDUCATIONAL CONSULTANT

2774. *American School Board Journal.* "The educational consultant in school architecture." (ed) *Am Sch Bd J* 76:67 Ap '28
Discusses the bringing into being of the vocation of educational consultant to the architect and commends the coöperation of architect and educator in school building.

2775. "The educational engineer." *Am Sch Bd J* 82:72 Ja '31
Briefly describes the duties and responsibilities of the educational consultant.

2776. Engelhardt, N. L. "The educational consultant in school-building planning." *Am Sch and Univ* 1931-32:15-19. il
Illustrates, by a study of planning in the schools of Holyoke, Massachusetts, how the services of the educational expert can be made of most value to school officials.

2777. Williamson, George H. "Experiences in designing and erecting a high school." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:66-70
Discusses the need for the coöperation of men experienced in various phases of building in properly developing a building plan for a school. The story of the Denver building program is given.

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VII. School Codes and Other Legal Provisions Affecting the Building Program

2778. Briggs, Herbert B. "Public-works regulations, policies, and practices as applied to school buildings." *Am Sch Bd J* 82:67-8, 142, 144 Ja '31

Points out the principles which should govern the making of public-works regulations as applied to the construction of school buildings.

2779. Clites, Myron Spencer. *Legal aspects of a consolidation program in Indiana.* Master's Thesis, Indiana Univ, Bloomington, 1930. 81 p

Study synthesizes constitutional and statutory provisions relating to school consolidation. Chapters IV and VI are particularly applicable to buildings and grounds.

2780. Fowlkes, John Guy. "State controls of local education." *Nation's Sch* 1:13-22 Mr '28

Shows the present status of state control of local education and indicates the degree to which it has operated as measured by educational results. Financial control is one of the items.

2781. Graham, James Lovett. *State laws in the United States relative to the planning and construction of public school buildings.* Master's Thesis, George Peabody Col for Teach, Nashville, Tenn., 1929. 176 p

2782. Holmes, Warren S. "A survey of state school building codes." *Am Sch Bd J* 79:56, 118 S '29

States that in a study of state building codes it was found that only 22 states exert legal control over the construction of their school buildings.

2783. McGowan, Howard M. *An analysis of the state school building codes of the United States.* Master's Thesis, Ohio State Univ, Columbus, 1929. 400 p

Comprises all statutory requirements relating to the purchase, sale, and use of sites and the specification in regard to construction. Findings show that there is little conformity in requirements as statutes appear to be created largely to meet only local problems.

2784. "An analysis of state schoolbuilding codes." *Educ Res Bul* 10:458-61 N 25 '31; 11:10-14 Ja 6 '32

Survey of all school building codes and classification of contents. Digests the provisions of various states as to location of building, size and methods of acquiring site, approval of site plans, percentage of site occupied by building, classification of buildings, construction requirements, building materials, courts, fire provisions, basement rooms, lighting, classroom requirements, sanitation, etc. Also compares legal requirements with requirements of Stevenson-Ashbaugh score card for elementary school buildings.

2785. Malan, Clement Timothy. *A legal study of the centralization of state control of education in Indiana as revealed by constitutional provisions, legislative enactments, and supreme and appellate court decisions,* p. 348-55. Doctor's Thesis, Indiana Univ, Bloomington, 1930

Sets out the legal aspect of the question, "How does state control reveal itself in matters of school buildings?" Discusses the Indiana situation relative to sites, lighting, ventilation, seating, water supply, and similar subjects. Provisions for providing funds for building, sites, and improvements are presented in Chapter XIII.

2786. Smith, James H. *Legal limitations on bonds and taxation for public school buildings.* Columbia Univ, Teach Col, Contr to Educ no. 453, New York City, 1930. 117 p

Survey of constitutional and statutory limitations in the 48 states on the power of school boards to tax and bond their districts for building purposes. Limitations on school indebtedness were obtained from state constitutions, school laws of states, and compiled statutes of states. Effects of limitations on school indebtedness on school building programs of various cities were found in recent surveys of the school systems of those cities.

2787. State of Kentucky. "Schools—heating, lighting, ventilation, water supply, and toilets—common drinking cups prohibited." In *Public health laws and regulations adopted during 1927*, by William Fowler, comp. *Pub Health Report* (Supplement) 75:371-2, 377-8, 1930

Quotes rules of the Board of Health relative to subjects mentioned in the title.

2788. State of Michigan. "School code." In *Public health laws and regulations adopted during 1927*, by William Fowler, comp. *Pub Health Report* (Supplement) 75:442-5, 1930

Gives some of the laws of Michigan relative to school building and equipment.

2789. State of Minnesota. *Laws and rules governing school buildings and sites.* State Dept of Educ, Div of Bldgs and Sanitation, St. Paul, Je '28. 46 p

A summary of the laws and rules of the State Board of Education of Minnesota pertaining to school buildings.

2790. State of Pennsylvania. *Rules and regulations for public school building construction.* State Dept of Pub Instr, State Council of Educ, bul no. 57, Harrisburg, 1931. 43 p

Contains state regulations concerning inspection, awarding of contracts, sites, the school building, and the schoolroom and equipment.

2791. Webb, Earl M. *Judicial decisions relating to contracts for school buildings.* Master's Thesis, Univ of Chicago, 1929. 100 p

An analysis of supreme court decisions of the United States to determine the principles of common law relating to contracts for school buildings.

2792. Weltzin, J. Frederick. *The legal authority of the American public school.* Univ of North Dakota, Sch of Educ, bul no. 7, University, Jl '30. 239 p

The liability of school boards in the construction, repair, and maintenance of school buildings is discussed in various sections of this work.

2793. Yakel, Ralph. *The legal control of the administration of public school expenditures.* Columbia Univ, Teach Col, Contr to Educ no. 388, New York City, 1929. 167 p

Discusses the relation of state, city, and federal government to local school affairs. Statutory requirements are also discussed.

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VIII. Building Materials, Specifications, and Structural Design

2794. Ambrose, William Clement. "Low cost fireproof school construction of San Francisco." *Am Arch* 135:107-13 Ja 20 '29. plans, il

A résumé of school construction in San Francisco since 1922. Illustrated by plans and pictures of certain buildings. Deals with mechanical features and costs.

2795. *American Architect.* "New York Building Congress standard specifications." *Am Arch* 135:65-9; 121-5; 205-8; 277-80; 343-50; 417-20; 485-9; 557-60; 625-30; 697-700; 767-70; 837-9 Ja 5, Ja 20, F 5, F 20, Mr 5, Mr 20, Ap 5, Ap 20, My 5, My 20, Je 5, Je 20 '29; 136:65-9; 135-9; 195-202; 265-72 Jl 5, Jl 20, Ag 5, S '29.

Consists of a number of answers to questions raised relative to the New York Congress standard specifications.

2796. Anonymous. "The selection of building materials to keep down the cost of operation." *Am Sch and Univ* 1931-32:68-9

Gives advice in the selection of building materials.

2797. *Architectural Forum.* "Concrete, stone and steel." *Arch Forum* 54:167-72, 253-4 F '31. plans, il

Description of St. Madeleine Sophie's Parish School and chapel at Germantown, Pennsylvania.

2798. Benson, Harry R. *Problems in the selection of school building materials.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, 1931

2799. Brummitt, Wyatt. "Structural and decorative possibilities of concrete construction." *Am Sch and Univ* 1930-31:88-90. il

Discusses concrete as a building material and describes a number of buildings made of this material.

2800. Byrne, Lee. *Check list for public school building specifications.* Columbia Univ, Teach Col, Contr to Educ no. 492, New York City, 1931. 195 p.; reviewed in *Arch Forum* 56:10 (adv) Ja '32

A check list which is the result of a scientific study and contains 11,649 items. The items are ranked in order of importance.

2801. Carpenter, Charles A. "Some suggestions for specification writers." *Heat and Ven* 29:46-7 Mr '32

Lists the three requirements of good specification and stresses the necessity for evaluation of equipment.

2802. Catharine, Irwin T. "Making spandrel beams over openings weathertight." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:28-32. mim

Deals with making exterior masonry walls weathertight at a minimum cost.

2803. *Concrete.* "Cast stone and stucco provide uniform exterior for schools." *Concrete* 35:23-4 O '29. il

2804. Holtman, Dudley F. "An easy way to specify lumber." *Am Arch* 137:47-9, 128 Ja '30

Tells how to specify and use lumber in accordance with modern standards and to make sure that the lumber specified has been used.

2805. Kirby, R. S. *The elements of specification writing*, Ch. V-XIII, John Wiley and Sons, New York City, 1927

Tho intended primarily for students of civil engineering, this work aims to meet needs of others as well. It deals mainly with the writing of specifications but also includes discussion of contract, bond, notice to contractors, information to bidders, and proposal. Appendix contains a bibliography of 98 items, of which 47 relate to specifications.

2806. Krahmer, C. S. "Specifications for school buildings." *Arch Forum* 48:475-6 Mr '28

2807. Lundin, K. G. "Copper mining community roofs new school building with copper." *Sheet Metal Worker* 22:612-14 O 30 '31. plans, diag, il

Description of an extensive job of copper roofing on the two-story Bisbee District No. 2 School at Lowell, Arizona.

2808. Mackler, Louis. "Electrical specifications." *Am Arch* 139:36-7, 78, 80 Je '31

Tells how to avoid a number of pitfalls in electrical specifications.

2809. Marsh, Reginald E. "Structural design of floors and walls." *Am Sch and Univ* 1928-29:43-4

Explanation of a few of the more important types of wall and floor construction. There is an extended discussion of skeleton and bearing wall construction.

2810. Mason, Philip A. "A municipal testing laboratory for building materials." *Am City* 44:138-9 Mr '31

Tells of the work of the material testing laboratory of Hartford, Connecticut.

2811. Monahan, A. C. "School building standards in District of Columbia." *Am Sch Bd J* 83:100 Jl '31

Gives standards which were made more rigid on account of three accidents during the construction of buildings in Washington.

2812. Morrison, J. C. "School construction and modern education." *Arch Forum* 50:267-71 F '29. il

2813. North, A. T. "The trial of fireproof wood." *Arch Forum* 54:247-52 F '31. il

A report of tests of fire resistive materials, particularly of fireproof wood.

2814. Reum, Oscar A. "Plaster work." *Am Arch* 138:54-5, 114, 116 N '30. il

Gives suggestions concerning the plaster work necessary on metal and wood lath and on concrete. Discusses types of plaster.

2815. Rogers, Tyler Stewart. "Steel joist floor and roof construction for school buildings." *Am Sch and Univ* 1930-31:46-50. il

Discussion of the use of non-combustible materials in school buildings.

2816. Trussell, V. A. "The value of careful specifications." *Pencil Points* 8:643-5 O '27

2817. Womrath, G. F. "Schoolhouse maintenance and materials." *Arch Forum* 48: 447-52 Mr '28

Brief comments on various materials.

2818. Womrath, G. F. and Enger, E. H. "Materials and details." *Arch Forum* 55: 738-42 D '31. diag

Discusses the selection of materials to be used in schoolhouse construction. Walls, finishing, ceilings, and floors are considered.

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IX. Acoustics—Radio and Public Address Systems

2819. *American School Board Journal.* "Install radio equipment at Shelby, Michigan." *Am Sch Bd J* 80:108 Mr '30
Tells of the installation of radio equipment in this school.

2820. "A scientific study of acoustics." *Am Sch Bd J* 81:54, 121 Ag '30. tables
A discussion of the defects of auditoriums, based on a study made by Mr. Paul R. Heyl of the U. S. Bureau of Standards, Washington, D. C.

2821. Anderson, G. R. "The acoustics of a building." *Eng and Contr* 66:524-6 N '27
Discusses the transmission, reflection, and absorption of sound; remedies for sound transmission; the proper design of an auditorium; and the relation between absorption and reverberation.

2822. *Architectural Record.* "Theatre acoustics, ventilating and lighting." *Arch Rec* 68:87-96 Jl '30. il
A compilation of articles discussing acoustics under the following headings: size, shape, and curvature of room; reverberation; reflection; absorption; change of size of audience; and materials. Also discusses systems of heating, cooling, and ventilation. Lighting, including color lighting, is also treated.

2823. Arnspiger, V. C. "The installation of sound-picture equipment in educational buildings." *Am Sch and Univ* 1931-32:314-18. plans, il
Describes the equipment and its installation in schools of different types.

2824. Bagenal, Hope and Wood, Alex. *Planning for good acoustics.* E. P. Dutton & Co., Inc., 1932. il, 415 p
This book contains a section on the planning of schools and auditoriums.

2825. Baldwin, C. B. "First California school audition system." *Sierra Educ News* 26:33 N '30
A statement concerning the audition system of the Huntington Beach Elementary School and the uses made of it.

2826. Blom, Edward Charles. *Radio and electric power supply equipment for schools.* Columbia Univ, Teach Col, Contr to Educ no. 409, New York City, 1930. bibliog, 188 p
Deals with the installation of school radios and with the electric power supply for high school science rooms. Practices in a number of large cities are noted.

2827. "Radio for schools." *Am Sch and Univ* 1931-32:295-301. plans, il
Discusses the value of the radio in school work and describes radio equipment. Lists a number of considerations in selecting equipment and describes some typical installations.

2828. Brownell, S. M. "Shall the plans for the new school include radio installation?" *Nation's Sch* 8:53-8 O '31. il
Report of Grosse Pointe, Michigan, school officials on their study as to the usefulness of radio in the schools and the factors to be considered in selecting and installing a system.

2829. Chrisler, V. L. "Sound transmission of materials." *Am Arch* 138:32-5, 98, 102, 104 Ag '30. plans, il
Discussion of the sound-proofing of walls and floors. Materials and methods are stressed.

2830. Cisin, H. G. "Modernizing educational methods through radio instruction." *Nation's Sch* 8:31-4 Jl '31. il
Describes the type of radio equipment installed in several high schools.

2831. Clifton, J. L. "Suitable radio equipment for schools." *Am Sch and Univ* 1930-31:55-8. il
Description of radio equipment suitable for schools. A radio score card is given.

2832. Cole, George. "Equipping the school with radio." *Nation's Sch* 2:53-6 O '28. diag, il
How to fit radio installation to exact requirements in accordance with the needs of the individual school. Drawing shows a typical installation.

2833. Darling, William T. "Buying quiet for the school." *Wis J Educ* 64:187 D '31; reprinted in *Aerologist* 8:36 Ja '32
Describes the acoustical treatment of the Wauwatosa Junior-Senior High School, Wauwatosa, Wisconsin, and discusses the value of such treatment.

2834. Darrow, B. H. "Ohio school of the air to continue two years more." *Sch Life* 14:198-9 Je '29
Among other things tells of the equipment used by the Ohio School of the Air.

2835. Duff, J. C. "Radio as a means to instruction." *Sch Executives M* 48:209 Ja '29
A discussion of the radio as worthwhile school equipment and of its use in the school.

2836. Foley, Arthur L. *Acoustics of talking picture theatres.* The Starr Piano Co. Richmond, Ind., 1929. 12 p
Deals with the acoustics of auditoriums and presents ways of overcoming sound obstacles.

2837. Friend, W. K. "How to design an auditorium where it is easy to hear." *Am Arch* 138:50-1, 80; 65-6 S, O '30. il
Discusses acoustics from the point of view of three governing factors, volume, shape, and reverberation.

2838. "Seating in relation to acoustics in school auditoriums." *Am Sch Bd J* 82:43-4 F '31. diag
Defines and applies methods to eliminate the two principal acoustical defects of auditoriums: (1) improper distribution of sound energy in the room, and (2) excessive reverberation.

2839. Geiger, C. W. "Windows muffled against street noise." *Sheet Metal Worker* 22:20 Ja 9 '31. il
Description of a metal muffler to be placed on windows next to a noisy street to prevent noise from entering the room.

2840. Graybar Electric Company. *Western electric public address systems.* Graybar Electric Co. pamphlet, Chicago, 1929. il, 24 p
Describes equipment for sound production in buildings and in the open air.

2841. Heimburger, Gunnar. "Sound insulating properties of some building materials." *Am Arch* 133:125-8 Ja 20 '28
Tells how to test partitions for sound insulating quality and describes the apparatus. Discusses different constructions as to qualities that will tend to make them sound proof.

2842. Jarvis, Emerson D. "Equipping the school for radio reception." *Am Sch Bd J* 82:61-2, 126 F '31. chart
Discussion of the essentials of a radio set for school purposes, the factors influencing the choice of set, and the types of equipment suitable for various school conditions.

2843. *The administration of the use of radio lessons*, p. 42-79, 141. Master's Thesis, Indiana Univ, Bloomington, 1931
Suggestions for equipping the school for the use of the radio in instruction.

2844. Kefauver, Grayson N. and Hand, H. C. "Are public address systems broadening education?" *Nation's Sch* 8:53-60; 67-70 Ag, S '31
Analysis of replies from 40 schools scattered thruout the United States, showing where microphones were placed, percentage of equipped classrooms, percentage of equipped special rooms, cost of system, relation between number of loud speakers and cost, agency purchasing system, utilization of system, and suggestions for further study.

2845. Keith, Alice. "The present and future of radio in public education." *Am Sch and Univ* 1929-30:271-4
Discussion of types of equipment suitable for school purposes. Outline of a typical two-channel centralized radio system.

2846. Knudsen, Vern O. "The acoustic design of school buildings." *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:155-65
Answers questions as to what are the outstanding principles of acoustics and how they can be incorporated in the design of school buildings. These questions are considered in relation to classrooms, gymnasiums, corridors, and administration rooms. Acoustic materials are also discussed.

2847. "Acoustical problems in the heating and ventilating of buildings." *Heat and Ven* 29:75-6 Mr '32
Abstract of an American Society of Heating and Ventilating Engineers paper at the Cleveland meeting, January, 1932, in which are discussed the four requirements for good hearing in any room and how heating and ventilating noises may be reduced to aid acoustics.

2848. Laird, Donald A. "Less noise for better educational results." *Nation's Sch* 2:17-21 D '28
The question of the relation of the outside disturbances to work and growth is discussed.

2849. "School noises and how to minimize them." *Nation's Sch* 3:66-70 Ja '29. plans, il
Description of the way in which sound control has been obtained in a number of buildings.

2850. Lindahl, R. L. "Eliminating noise in schools." *Am Sch Bd J* 81:39-41 N '30. charts, il
Suggests methods to reduce noise produced by fan motors and vibrating machinery, corridors, gymnasium, swimming pool, manual training rooms, toilet rooms, and libraries.

2851. "Solving common acoustical problems of schools." *Am Sch Bd J* 84:50-1, 85-6 Ja '32. il
Discusses the requirements for good acoustical conditions in schools and points out specific ways in which acoustical defects may be corrected. Discusses also the problems encountered with the installation of public-address systems.

2852. McSpadden, W. W. and Raines, Charles C. "Talking pictures for teaching purposes." *Sci Educ* 16:192-8 F '32
A discussion of the equipment available and essential for the production of talking pictures in schools. Comments on the amplifier, the screen, the speaker, and the location of the various units.

2853. *Nation's Schools*. "Removing acoustical defects from auditoriums and other rooms." *Nation's Sch* 5:86 Je '30
Review of a bulletin on acoustics by the Bureau of Standards, U. S. Department of Commerce. Tells how to remedy common defects.

2854. "Newly patented process may prove boon to schoolroom." *Nation's Sch* 8:69 D '31

Describes newly patented material to place on the under side of seats to absorb such sounds as shuffling of the feet.

2855. Oswald, F. M. "The acoustics of the large assembly hall of the League of Nations, at Geneva, Switzerland." *Am Arch* 134:333-42 D 20 '28

Discusses the planning of the building and the particular acoustical problems relating to it.

2856. Parkinson, John S. "Acoustical treatment in the school and university." *Am Sch and Univ* 1930-31:73-6. Il

Discusses methods of treating buildings for sound control. Materials for such treatment are suggested.

2857. *Poore, Earl Y. "Some essentials of radio and public address equipment for schools." *Am Sch Bd J* 83:47-8, 133 Jl '31

Discusses (1) multiple receivers, (2) independent public address channel, (3) classroom control, (4) replaceable tuning device, (5) automatic balance, (6) master switchboard, (7) cabinet, (8) multiple reproducers, (9) proper baffling, and (10) distribution.

2858. Ritchie, John. "Sound amplifying distributing installations for schools." *Am Sch Bd J* 80:68, 70 Mr '30

Gives the essentials of an address system and lists apparatus. Also discusses the use of the system.

2859. Rosenblatt, Maurice C. "Acoustical defects visualized by light rays." *Am Arch* 137:40-3, 94, 96 Ap '30. Il

Tells how to use reflected light to forecast acoustic quality from plans and thus prevent defective design.

2860. Rountree, Richard J. "Analyzing the uses of quieting materials in schools." *Nation's Sch* 8:55-60 Ja '32

Shows how the acceptance of newer methods of teaching has brought about the development and use of sound absorbing equipment.

2861. Sabine, Paul E. "Architectural acoustics." *Am Arch* 135:745-52 Je 5 '29

Deals with the sound absorption coefficients of materials. Shows the effect on tone quality.

2862. *School Executives Magazine.* "Pioneering in radio instruction." *Sch Executives M* 49:529 Jl '30

Tells of the equipment which aids in radio instruction in the high school at Shelby, Michigan.

2863. Troxell, Mark G. "Improving school-auditorium acoustics." *Am Sch Bd J* 78:158, 161 Ja '29. Il

Tells how to insure correct acoustics in an auditorium and how to eliminate echoes and buzzes. The achieving of correct reverberations and the elimination of "dead spots" are discussed.

2864. Watson, F. R. "Auditorium acoustics." *Am Inst Arch J* 16:259-67 Jl '28

Reviews the fundamentals of acoustics and suggests some equipment and arrangements of materials to improve the acoustics of auditoriums.

2865. "Reducing noise in school buildings." *Am Sch and Univ* 1931-32:54-7. Il

Gives instructions for quieting a schoolroom. Soundproofing of walls and floors is discussed.

2866. Wente, E. C. "The effect of the acoustics of an auditorium on the interpretation of speech." *Am Arch* 134:359-61 Ag 20 '28. Il

Discussion of the acoustic properties of rooms and their effect upon speech.

2867. Westlake, Kenneth H. "Radio and a public address system." *Sierra Educ News* 28:23-5 F '32. il

Describes the equipment in Tracy Union High School, California, and tells of its application to school affairs.

2868. Whitby, Jean. "Modern acoustics." *Woman's J* 15:34-5 O '30. il

Discussion of the part sound plays in everyday life and its connection with schools. Suggestions for improving sound conditions are given.

2869. Wolf, S. K. "The new science of acoustics." *Theatre Arts Monthly* 15:843-9 O '31. il

Discusses the physical laws governing acoustic phenomena and applies them to the stage.

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X. The School Grounds

2870. *American City.* "Good design in ornamental flagpoles." *Am City* 39:130-1 N '28. il

Brief descriptions of a number of ornamental flagpoles.

2871. Draper, E. S. and Bursley, H. B. "New school grounds development at Greensboro, North Carolina." *Am Sch and Univ* 1928-29:149-51

A discussion of the school expansion program of Greensboro and of the features of the development of two of the four groups now being undertaken.

2872. Ford, George B. "Schools and school play yards—a scientific method of determining their location and urgency." *Am Sch and Univ* 1928-29:187-90

A discussion of school expansion including such topics as: Who should plan; methods of study; school standards; selection of site; planning for the future; and a report of the study at Dayton, Ohio.

2873. Sellman, W. N. "The problem of adequate elementary school playgrounds." *Am Sch and Univ* 1928-29:195-7. il

Discusses the tendency to extend playground opportunities beyond the school day and attaches the responsibility for this extension. Gives suggestions as to playground equipment.

2874. Spaulding, E. A. "Development of a school park." *Platoon Sch* 5:29-31 D '31

Story of the development of the school park at the Emerson School in Gary, Indiana.

2875. Strayer, George D.; Engelhardt, N. L.; and Burton, T. C. *Campus standards for country, day, and boarding schools.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1930

A campus score card for country, day, and boarding schools, listing more than 70 separate items that contribute toward the most desirable campuses. The score card is followed by a description of what should be considered an ideal situation for each item.

2876. Warberg, S. J. "The design of vertical tubular steel flagpoles." *Arch Rec* 68:65-70 Jl '30. il

Gives information relative to the construction of flagpoles. Tells what information should be given in specifications.

2877. Ward, David A. "School gardens." *Am Sch and Univ* 1930-31:206-9. plans, il

Discusses school gardens as to location, plans, arrangement, supplies, etc.

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THE SELECTION OF THE SITE AND THE ORIENTATION OF THE BUILDING

2878. *American City.* "Flint leads cities of 100,000 and less in acreage acquired for school purposes since 1915." *Am City* 37:447 O '27

Statement of the acreage for the schools of Flint, Michigan, and comparison with others of its class.

2879. *American School Board Journal.* "The location of school sites in growing cities." (ed) *Am Sch Bd J* 76:66 Ap '28

An appeal for timely anticipation of future needs, but an assertion that present as well as future generations must be considered in the selection of a site.

2880. "Considerations in the selection of school sites." (ed) *Am Sch Bd J* 77: 64-5 S '28

Elements to be considered in site selection are discussed.

2881. "The task of selecting school sites." (ed) *Am Sch Bd J* 78:88 Ja '29

A discussion of some of the problems connected with selecting and securing a site. A plea for timely anticipation in selection.

2882. "The newer phases in school site selections." (ed) *Am Sch Bd J* 80:66 Mr '30

A discussion of problems involved in site selection.

2883. "The selection of school sites." (ed) *Am Sch Bd J* 83:65 Jl '31

Comment upon the selection of a real-estate agent by the New York School Board to negotiate all purchases of sites.

2884. "Premature information on school site selection." (ed) *Am Sch Bd J* 83:63 S '31

States that recent experience in New York City again points to the necessity for "star chamber sessions" of the Board of Education in selecting and acquiring sites.

2885. "Orientation of school buildings." *Am Sch Bd J* 84:60, 62 F '32

Comments and quotations from an article by L. T. Tustin in the *Educational News*, published by the State Department of Education, Charleston, W. Va. Discusses the advantages and disadvantages of light from various directions for rooms used for several different purposes.

2886. Baars, A. "Supervising the schoolground." *Neb Educ J* 11:182 Mr '31

2887. Burns, Robert Leo. "Measurement of the need for transporting pupils." *Teach Col Rec* 29:550-1 Mr '28

Presents an index of transportation which will enable a state to distribute the burden of transportation.

2888. *California Quarterly of Secondary Education.* "Average size of high school sites in California." *Calif Q Sec Educ* 3:354 Je '28

Chart showing the average size of site in 16 cities and in the entire state.

2889. Clapp, F. L.; Chase, W. J.; and Merriman, Curtis. "School site and building." In *Introduction to education*, p. 398-408. Ginn and Co., New York City, 1929

State that "the general practice in the United States and the tendency in present day opinion" are indicated in excerpts which he quotes from McClure's *Ventilation of school buildings.*

2890. Eells, Walter Crosby. "Graphic representation of distances children must walk to school." *Am Sch Bd J* 77:42, 138 N '28. charts

Presents the difficulties in the circle method of representation of attendance areas and proposes another method.

2891. Engelhardt, Fred; Hegel, Newton H.; and Womrath, George F. *Selecting sites for school buildings.* Univ of Minnesota Press, Minneapolis, 1928. maps, plans, il, fold, 20 p

Gives some valuable scientific techniques for the selection of school building sites. Results of a survey of school building needs of the city of Minneapolis are given.

2892. Engelhardt, N. L., and Featherstone, W. B. "Score card for selection of school sites." *Am Sch and Univ* 1930-31:29-31
Presents a score card and discusses the need for its use.

2893. Goodnough, W. F. "The fencing of school yards and athletic fields." *Am Sch and Univ* 1929-30:227
Makes brief suggestions for school fencing.

2894. McKelvie, William David. *Selection of a school site in Washington, New Jersey.* Master's Thesis, New York Univ, 1931. 35 p
Study of the need for a new school, the population growth prediction of the school and community, the ability of the community to finance a new building, and a canvass and scoring of the possible sites.

2895. Moehlman, Arthur B. "How to determine the location of new centers." *Nation's Sch* 8:78, 80, 82 S '31
Recommends preparation of three maps, one each for elementary, junior high, and senior high schools, based upon the factors of population growth and walking distance. By the use of these three maps the sites may be located.

2896. Nanninga, S. P. "Evaluation of the present school plant and sites at Estancia, New Mexico." In *Report of the survey of the Estancia public schools*, p. 50-8. Univ of New Mexico, Univ of New Mexico Bul, vol 5, no. 8, Albuquerque, O 15 '31
Discusses and evaluates the sites of the various schools of the city and develops a site program.

2897. Nugent, Donald R. *An evaluation of Palo Alto elementary school sites.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, 1931

2898. Perry, Clarence Arthur. "The neighborhood unit." In *Neighborhood and community planning*, p. 22-140. Regional Plan of New York and Its Environs, New York, 1929
Discussion of the relation of the school to the community as found by the Committee on Regional Plan of New York and Its Environs. This is Volume VII of the Regional Survey.

2899. "The relation of school-site planning to neighborhood planning." *Am Sch and Univ* 1929-30:13-17. plans
Emphasizes the need for and presents the tendency toward proper planning of school sites and study of community needs and possibilities in this connection.

2900. Reese, L. W. "How to choose the site for the new city school." *Nation's Sch* 4:63-71 D '29. bibliog
Report of a study, developed over a period of years, containing many valuable suggestions on the choosing of suitable locations for school buildings.

2901. *School and Society.* "Investigation of sites and supplies of the New York City schools." *Sch and Soc* 34:119-20 Jl 25 '31
A criticism of some of the practices of site selection and contract letting.

2902. Seelye, Elwyn E. "The determination of the bearing power of soils." *Am Arch* 133:129-31 Ja 20 '28. il
Makes suggestions for determining the bearing power of soils. Gives the New York City Building Code for different soils.

2903. State of California. *Standards for public school sites.* State Dept of Educ, Div of Schoolhouse Planning, bul no. K-2, Sacramento, 1930. il, 31 p
Gives the minimum standards for school sites in California and the score card to be used. Also tells of site selection service available to local districts and some legal aspects of procuring, enlarging, or selling school sites.

2904. State of New York. *School buildings, sites and school district bonds.* Univ of the State of New York, bul no. 923 (Law pamphlet 1), Albany, My 1 '29. 61 p

2905. *School buildings, sites and school district bonds.* Univ of the State of New York, bul no. 979 (Law pamphlet 1), Albany, S 1 '31. 61 p

This pamphlet discusses the selection and acquisition of schoolhouse sites, the erection of new buildings and additions, and issuance and sale of school bonds.

2906. Stuart, Milo H. "What should be the size of a secondary school for maximum efficiency?" *Sch Life* 14:191-3 Je '29

A discussion of the size of the school as it relates to the opportunity to serve the pupils well.

2907. Tustin, L. T. "Proper location of schoolhouses." *Educ News* 6:234-7 S-O '31

Discussion of factors to be considered in selecting the site for a rural schoolhouse.

2908. *Wisconsin Journal of Education.* "Concentrated 8 in 1 educational campus in South Milwaukee." *Wis J Educ* 63:437-9 My '31. plans, il

2909. Wright, Mark. "Clearfield's school adventures." *Am Sch Bd J* 82:150 Ja '31

Discussion of the following eight essential qualities of a school site: (1) adequate size, (2) orientation of building, (3) freedom from noise and odors, (4) suitability for construction, (5) safety, (6) healthfulness, (7) reasonable centrality, and (8) reasonable accessibility.

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LANDSCAPING

2910. *American Educational Digest.* "Beautifying school grounds." *Am Educ Digest* 47:178 D '27
Quotes the *Boston Transcript* on the need for yard beautification.

2911. *American School Board Journal.* "Beautifying school grounds and school board support." (ed) *Am Sch Bd J* 80:67 Ap '30
Discusses the beautification of grounds and how to finance the work. Quotes Mrs. Edna Hatfield Edmondson, Indiana University.

2912. Blair, John J. "Planning and planting school grounds." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:8-26. mim
Discusses the divisioning of the school grounds into play areas and landscape areas and treats in detail the shrubs and trees suitable for use in school-ground landscaping.

2913. Bourne, J. "Beauty spot in every community." *Successful Farming* 29:17 O '31. plan, il

2914. Briggs, L. W. "The landscape architect, the architect, and the school." *Am Sch and Univ* 1932-33:150-2. plans, il
Points out the advantages of coöperation and describes the landscape arrangement of the Highland Grade School in White Plains, N. Y.

2915. Bushey, D. J. *The design and development of school grounds.* New York State Col of Agri at Cornell Univ (Cornell Ext Bul no. 194), Ithaca, Jl '30. il, 15 p
Discusses both landscaping and layouts for play purposes in large and small school grounds.

2916. Draper, E. S. "Planning of school grounds by the landscape architect." *Am Sch and Univ* 1929-30:173-7. il
Discusses the general arrangement of school grounds and the duties of the landscape architect.

2917. *Edmondson, E. E. *Beautification of school grounds.* Indiana Univ, Bul of Ext Div, vol 14, no. 9, Bloomington, My '29. 32 p
Discusses the care and arrangement of playgrounds, landscaping the school grounds, and arrangement of walks and drives.

2918. *Educational Review.* "Mrs. Taylor of Taylorville." (ed) *Educ R* 74:119-20 O '27
Discusses the efforts of Mrs. Taylor to secure beautiful school environment.

2919. Farwell, G. A. "School ground beautification in Cattaraugus County." *N Y State Educ* 18:755, 808-11 Ap '31
Tells of the efforts in this county to beautify the buildings and grounds of its rural schools.

2920. Hall, L. Glenn. "Landscape design for playgrounds." *Am City* 42:90-2 Je '30. il
An outline for landscaping. Illustrations from Los Angeles are shown.

2921. Herminghaus, E. "Beautiful school grounds." *Neb Educ J* 11:154 Mr '31. il

2922. Hill, Chance S. "Landscape architecture for the development of school property." *Am Sch Bd J* 80:80, 150 Ja '30. plans, il
Explains the duties of the landscape architect which include: (1) preparation of a topographical survey, (2) preliminary general plan, and (3) detailed plans for the engineering and planting of the school grounds.

2923. Howe, Edgar L. "Landscaping the Rye Neck school grounds." *Am Sch and Univ* 1932-33:142-3. il
Describes the landscape planning at the Rye Neck Elementary School at Rye, N. Y.

2924. Jensen, Jens. "Landscape design and the city school child." *Nation's Sch* 3:49-52 Ap '29. plans, il

Discusses attractive grounds as an asset to a school and suggests layouts for them.

2925. Lay, Charles Downing. "Factors needing consideration in the landscaping of school grounds." *Am Sch and Univ* 1929-30:177-9. plans, il

Discusses the factors needing consideration in planning landscaping.

2926. Lee, Albert E. "School room beautification and its influence on pupil morale." Duke Univ, Durham, N. C., 1930

Discusses standards of aesthetic arrangement and decoration of school rooms and school grounds, and evaluates their influence on the character and habits of pupils.

2927. McMillan, David G. "Beauty on the playgrounds." *Playground and Recreation* 23:355 Ag '29

Tells how to secure beauty on the playground.

2928. Munsey, Robert E. "The landscaping of school playgrounds in Santa Monica, California." *Am City* 37:622-3 N '27. il

Description of some landscaping in Santa Monica and the story of the way in which it was accomplished.

2929. *Nation's Schools.* "Harmonizing school architecture with the landscape design." *Nation's Sch* 6:62 Jl '30

Attempts to answer the question, "When is the time to introduce landscape design into school plan problems?"

2930. Nichols, A. R. "Recent trends in landscape architecture for school grounds." *Am Sch and Univ* 1930-31:198-205. plans, il

Presents some landscaping plans from different states. Shows something of a trend to the beautiful.

2931. Peck, Arthur L. *Landscape architecture.* Oregon State Agri Col, bul no. 457, Corvallis, Jl '29. plans, il, 24 p

Discusses landscape gardening from the standpoint of the information needed by the landscape engineer and offers some solutions for some landscape problems.

2932. Pesman, M. Walter. "Landscape development of school grounds." *Am Sch Bd J* 76:47-9, 132; 45-6, 169 F, My '28. plans, il; also *Nat Assn Pub Sch Bus Officials* (Proc of 17th annual meeting) 1928:197-205

Discussion of principles of school-ground landscaping. A number of difficulties to be met are discussed.

2933. "How landscaped grounds satisfy educational needs." *Nation's Sch* 7:27-34 Mr '31. il

Presents the desirability and value of proper landscaping and gives some splendid examples.

2934. Pilat, Carl F. "Planning and planting school grounds." *Am Sch and Univ* 1931-32:197-202. plans, il

Discusses the landscaping of grounds of different sizes and under various conditions. Different views are shown to illustrate.

2935. *School Executives Magazine.* "Landscaping school grounds." *Sch Executives M* 49:141 N '29

Points out the necessity for and justifies the expenditure of funds for landscaping.

2936. Sibley, Ernest. "School exterior." *N Y State Educ* 18:751-4, 811-12, 814 Ap '31. il

Discusses those features of school buildings which tend to add to the general beauty of the buildings and shows the relation of buildings to the landscape.

2937. Underhill, P. H. *Beautification of school buildings and plants.* Master's Thesis, Ohio State Univ, Columbus, 1929. 171 p
Deals with the beautification of schools by landscaping. Contains a study of costs, a score card on this subject, and illustrations of typical buildings.

2938. Whittemore, H. O. "Landscaping is educational factor." *Mich Educ J* 7:621-4 Je '30. il

2939. Wofford, K. V. "Beauty goes to school." *Nat Educ Assn J* 20:122-4 Ap '31. bibliog, il
Discussion of a need for the beautiful in school surroundings.

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THE PLAYGROUND, ATHLETIC FIELD, FIELDHOUSE, AND STADIUM

2940. Abercrombie, Edward F. "Squash court and rules of the game." *J Health and Phys Educ* 2:39-41 Ap '31. plans
Describes in detail the layout of courts for a number of games used in physical education.

2941. Altenburg, West J. "A study of play facilities of seventy-one elementary schools in seventy-one cities of over 20,000 population." *Res Q Am Phys Educ Assn* 2:61-6 My '31. bibliog
Report of a study of gymnasiums and playgrounds in this group of cities.

2942. *American City.* "Safe portable bleachers." *Am City* 38:195 My '28. il
Statement of the essentials of safe portable bleachers.

2943. "Night lighting for outdoor sports." *Am City* 42:158-9 Je '30. il
Description of lighted fields in a number of cities.

2944. "Lighting for night tennis in public parks." *Am City* 44:186-8 Ap '31
Describes a number of lighted tennis courts. Explains in some detail how the lighting is done.

2945. *American Physical Education Review.* "Field day ground plans, Atlantic City, New Jersey." *Am Phys Educ R* 34:62-6 Ja '29. plans
Gives ground plans for a number of events for a field day.

2946. *American School Board Journal.* "Eliminating bad boys by good playgrounds." *Am Sch Bd J* 77:58, 140 N '28
Report of a survey made by *The American City Magazine* on juvenile delinquency and the playground.

2947. "Standards for playground equipment." *Am Sch Bd J* 80:125 F '30
Report of a committee of 17 recreation experts to the Playground and Recreation Association of America. Sets standards for playground equipment.

2948. "A playground that achieves maximum use." *Am Sch Bd J* 83:38 S '31. il
Describes briefly the athletic field of Johnstown, New York.

2949. Anchor Post Fence Company. *Playgrounds, their planning, construction, and operation.* Anchor Post Fence Co., bul no. 72, Baltimore, Md., 1928. plans, il, 18 p
Discusses organized play as a necessity for children and tells how to plan, construct, and equip a playground.

2950. Barr, Daniel H. "Factors affecting successful surfacing of playgrounds and drives." *Am City* 38:139 Mr '28
Report of a study in surfacing conducted by the school authorities of Harrisburg, Pennsylvania.

2951. Bartley, Robert J. "A model athletic field replaces a swamp." *Am City* 44:140 Mr '31
Description of a beautiful playground at Bay Shore, Rhode Island.

2952. Bauer, E. A. "School playground." *N Y State Educ* 18:760-1, 816 Ap '31. il
Discusses the planning of school playgrounds and presents the need for ample space.

2953. Bennett, Paul. *Present status and desirable needed modifications of tennis.* Northwestern Univ, Univ pamphlet, Evanston, Ill., 1932. plans, 24 p
Report of a study of 242 schools in the Middle West. Among other phases studied are facilities and court construction and maintenance.

2954. Brownell, C. L. "Gymnasium and playground equipment for high schools." *H Sch Teach* 4:174 Ap '28
List of equipment recommended for Ohio by state authorities.

2955. Butler, George D. "Changes in playground design and equipment." *Recreation* 25:95-7, 105-6A My '31. il
Discusses changes that have developed during the last 25 years.

2956. "Playground plot plans—good and not so good." *Am Sch and Univ* 1932-33:179-81. diag
Presents the standard physical education unit for junior high schools of Pasadena, California, and plot plans for the Lake Bluff Grade School at Shorewood, Wisconsin; a high school of Wisconsin; a Texas school group; and the Bronxville, New York, school plot.

2957. Cheney, Charles H. "Combining school grounds, playgrounds and neighborhood parks in Palos Verdes Estates, California." *Am Sch and Univ* 1932-33:139-42. il
Discusses the 10-25-40 standard of school site sizes, additional park areas, and maintenance, and describes the playground plan of the Malaga Cove Elementary School.

2958. Childs, Frank A. "New physical education buildings of the Oak Park and River Forest Township High School." *Am Sch and Univ* 1929-30:215-20. plans, il
Describes the boys' field house and girls' gymnasium of this school. Considers pool, lockers, heating, and ventilating.

2959. Clegg, Gilbert. "Playground planning and supervision." *Modern Pub Bldgs* 2:5-7 Ja '28
Discussion of standards for playgrounds and equipment.

2960. Curtis, Henry S. "School grounds bear an important part in the school program." *Sch Life* 13:200 Je '28
A discussion of the preparation and care of school grounds.

2961. "Maintaining school yards." *Nation's Sch* 2:26 Ag '28
Directions for the care of yards and discussion of surfaces, grass, shrubbery, trees, etc.

2962. Feldman, Jacob W. "The effects of playgrounds on land values." *Playground and Recreation* 23:375-84 S '29
Part of a master's thesis study made in Brooklyn, New York, and Orange, New Jersey.

2963. Fisher, William H. "New stadium and field house at Phillipsburg, New Jersey." *Am City* 44:153, 155 F '31. plans, il
A brief description of the stadium and fieldhouse at Phillipsburg. Stadium seats 5,300.

2964. Hadden, Gavin. "The orientation of athletic fields." *Am City* 38:138-41 My '28. maps
Shows necessity of proper orientation of grounds for tennis, football, baseball, and other games.

2965. "Outdoor athletic facilities at school and university." *Am Sch and Univ* 1928-29:172-7. plans
A discussion of the modern idea of physical exercise and its connection with the school. Outdoor athletic facilities for typical schools are suggested. Certain college fields are described as illustrations.

2966. Hall, Ralph H. "Drainage makes Charlotte's vision of a fine athletic field come true." *Am City* 41:132-3 Ag '29. plans, il
Description and story of the development of the athletic field of the high school at Charlotte, North Carolina.

2967. Hanmer, Lee F. *Public recreation.* Regional Plan of New York and Its Environs, New York, 1928. 256 p
The relation of the school playground to the city recreation facilities and the standards for space requirements for recreation are presented on pages 103 to 133. This is Volume V of the Regional Survey.

2968. Heideman, Walter H. "Planning an athletic field." *J Health and Phys Educ* 1:38, 40-2, N '30
Explains in detail a method of laying out a football field and track.

2969. Henderson, John C. "Playground safety practice." *Am City* 43:84-5 Jl '30. il
Lists and discusses some safety practices in the playgrounds of Los Angeles, California.

2970. Hermann, E. "Some essentials in playground planning." *J Health and Phys Educ* 2:11-13, 47 Je '31. plans, il; also *Am Sch and Univ* 1931-32:231-3
Discusses the planning of playgrounds and principles underlying such planning.

2971. Hetrick, Clarence. "Asbury Park has new athletic field and stadium." *Am City* 38:142-3 Ap '28. plans, il
A description of the stadium and field at Asbury Park, New Jersey.

2972. Hutchings, Raymond R. "Playground surfacing." *Am Sch Bd J* 79:39-40 N '29
Discussion of problems connected with school playground surfacing, materials, and methods used in various parts of the United States.

2973. Keith, John A. H. *Playground manual.* State of Pennsylvania, Dept of Pub Instr, bul no. 30, Harrisburg, 1927. plans, il, 51 p
Discusses home, school, and community playgrounds and gives plans for courts for different games and instructions for setting up equipment and for making some pieces of apparatus. Plans for high school athletic fields are given and a list of manufacturers of playground apparatus and athletic equipment is added.

2974. Kieffer, John C. "Playgrounds on the ground and in the air." *Am Sch and Univ* 1930-31:245-7. il
Describes some Philadelphia school playgrounds, among them being some roof grounds.

2975. Knollin, Ernesto Ray. *Construction and layout of high school and college athletic fields.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, 1929

2976. Lighty, Kent. "Protecting the school playground." *Am Sch Bd J* 76:44-5, 134; 50-1, 121 Mr, Ap '28. il
Discussion of the need and effectiveness of the fence as a preventive of accidents and a help in the regulation of traffic.

2977. Loevenguth, O. P. "Organized recess period." *J Health and Phys Educ* 2:30-1, 44 Je '31. il
Submits a plan for playground organization and suggests ground layout.

2978. Lundgren, W. W. "Football at night with plenty of light." *Am City* 41:157 S '29
Description of the lighted football field at Burlington, Iowa.

2979. Martin, Cecil F. "The playground, equipped or cluttered." *Am Phys Educ R* 34:594, 596 D '29; also *Sch Executives M* 49:11-13, 55-6 S '29. plans, il
Discusses the material necessary for proper instruction in physical education in Grades I to XII.

2980. Nash, J. B. *The organization and administration of playgrounds and recreation.* A. S. Barnes and Co., New York City, 1927. 547 p.; reviewed by W. P. Bowen in *J Educ Res* 17:146 F '28
City planning and the need for providing proper play space are discussed.

2981. *Nation's Schools.* "The design and equipment of play areas." *Nation's Sch* 5:57 Mr '30
Announcement of a book, *Play Area*, in which design and equipment of play areas are discussed.

2982. "Should school playgrounds be scrapped?" (ed) *Nation's Sch* 8:71-2 D '31
Views with alarm the present cry to dispense with school playgrounds on the plea of economy.

2983. Neilson, Neils P. and Van Hagen, Winifred. "Play areas, equipment and supplies." In *Physical education for elementary schools*, Ch. V, p. 49-68. A. S. Barnes and Co., New York City, 1930
Suggests plans for laying out grounds and surfacing. Discusses commercial equipment. Lists equipment and supplies. Makes suggestions for safety provisions.

2984. Pangburn, Weaver. "Public recreation in 1891 and 1931." *Am Sch Bd J* 82:58 Mr '31
A brief history of the development of the recreation program and a discussion of the present-day activities.

2985. *Parks and Recreation.* "Brookline grandstand-field house." *Parks and Recreation* Ag '29

2986. *Permaflector Lighting.* "Athletics at night." *Permaflector Lighting* 4:3-4 Mr '31. il
Deals with lighting playing fields for night work.

2987. "Night lighting for outdoor sports." *Permaflector Lighting* 4:5-14 Mr '31. plans, il
Discusses lighting for different games. Gives plans for lighting different playing fields.

2988. Pittsburgh Reflector Company. *Play football at night.* Pittsburgh Reflector Co., Pittsburgh, Pa.; reviewed in *Arch Forum* 56:20 (adv) Ja '32
Deals with illumination for night athletic events.

2989. *Platoon School.* "Surfacing playgrounds for platoon schools." *Platoon Sch* 3:86 Je-Jl-Ag '29
Brief but concise directions for surfacing playgrounds.

2990. *Playground and Recreation.* "Play space standards." *Playground and Recreation* 23:181-2 Je '29
Quotes from a report of the National Playing Fields Association of Great Britain giving a number of standards of play space.

2991. "Tennis courts." *Playground and Recreation* 23:316-27 Ag '29. il
Reports a study of tennis courts in 29 cities. A table is given which sets out the features of each.

2992. "Field houses." *Playground and Recreation* 23:329-35 Ag '29. plans, il
Summarizes a number of outstanding features in field houses in a number of cities of the United States.

2993. "Report of committee on standards in playground apparatus." *Playground and Recreation* 23:631-4 Ja '30
A report made by a committee of 17 recreation executives dealing with types of apparatus and setting some standards for playground equipment.

2994. *Playground and Recreation Association of America. *Play areas—their design and equipment.* A. S. Barnes and Co., New York City, 1930. plans, il, 206 p.; reviewed in *Playground* 22:644-5 F '29
Comprehensive guide in the designing and equipping of playgrounds for all parts of the country. Includes pools, apparatus, structures, landscaping, and layouts, all well illustrated.

2995. Quinlan, W. L. "Asphalt and sawdust surfacing prove practicable for public tennis courts at Tampa." *Am City* 43:108 N '30. il
Specifications for tennis courts in Tampa, Florida.

2996. Ready, Marie M. *Games and equipment for small rural schools.* U. S. Bur of Educ, Physical Educ series no. 8, 1927. 16 p
Layout of courts and grounds and equipment for playgrounds are discussed.

2997. *Physical education in city public schools,* p. 81-97. U. S. Bur of Educ, Physical educ series no. 10, 1929
Gives in tables statistics concerning gymnasia, playrooms, playgrounds, athletic fields, and swimming pools in a large number of cities of the United States. Cities are listed by states.

2998. **School playgrounds.* U. S. Office of Educ, Pamphlet no. 10, Je '30. 40 p
An attempt to show what playground provisions are being made for the physical education and recreational activities of school children. Part I, playground areas, gives suggested standards; present legislative requirements; regulations of state departments; legislation for condemning areas; and recommendations of state boards. Part II, playground layouts and equipment, deals with planning the layout; regulations and suggestions pertaining to equipment; and space requirements for games. Part III considers the use of playgrounds after school hours. Part IV shows the progress in school playground development.

2999. "Extensive school playgrounds stimulate healthful recreational activities." *Sch Life* 16:35-7 O '30. il
Discussion of the tendency to increase playground facilities.

3000. Schoenwetter, Theodore H. "Is an all year playground surface possible?" *Am Sch Bd J* 80:54, 130 My '30
An explanation of the process of surfacing playgrounds as developed by Santa Monica, California. The advantages of this process are shown.

3001. *School and Society.* "Survey of the supervised playgrounds in New York City." *Sch and Soc* 34:7-8 Jl 4 '31
Gives a summary of the complete report of the survey by the United Parents' Associations of New York City.

3002. Scott, Frank A. "Belmont believes in playgrounds." *J Educ* 114:477-8 D 28 '31
Tells of the development of the playground in Belmont, Massachusetts, giving information as to size and cost.

3003. *Serby, Myron W. *The stadium.* American Institute of Steel Construction, Inc., New York City, 1930. plans, il, 64 p
A practical book giving instruction as to planning, designing, constructing, and equipping stadiums. Errors in some structures are pointed out and suggestions for improvements given. Numerous details of stadium structure are given.

3004. State of Indiana. *The health education and physical education program for Indiana high schools.* State Dept of Pub Instr, Supplement to bul no. 100 F, Indianapolis, 1930. 31 p
Gives suggested minimum standards for playfields and lists minimum equipment for various sized schools.

3005. Storey, Charles J. "Modern trends in the design and equipment of public school playgrounds." *Am Sch and Univ* 1929-30:223-7. plans, il
Discussion of four types of school play space: (1) small exercise yard, (2) large playground with play apparatus, (3) playground for small children and large play field, (4) playground for small children with formal athletic field. Also discussion of the school-park-playground plan of designing school play space.

3006. Stroud, C. C. "A combination athletic field for football, baseball, and track." *Athletic J* 11:9 My '31. plan
Gives instructions for the combination layout for football, baseball, and track.

3007. Sutton, W. A. "Health and physical education in junior and senior high schools." *Bul of Dept of Supt of the N.E.A.* (6th yearbook) 1928:457-68
Furnishes some brief suggestions on indoor and outdoor physical education equipment.

3008. Thornton, H. O. "Night football." *Athletic J* 12:15-16 D '31
Discusses the cost and installation of systems of lighting for football fields.

3009. Weiland, Francis N. "The status of playground facilities in Nebraska schools and a playground program adapted to the McCook schools." *Educ Res Rec* 2:118-19, 123-6 F '30. tables
A report of a study of play areas and equipment for 134 Nebraska schools having an enrollment of 200 or more pupils.

3010. Wherry, Neal M. "Holton High School bleachers, Holton, Kansas." *Am Sch Bd J* 77:59-60 Ag '28. il
A description of the athletic field and its seating at Holton, Kansas. Some costs are shown.

3011. Wieman, E. E. "Planning of athletic fields." *Pentathlon* 2:17-19, 42-3 O '29

3012. Woodring, Maxie N. and Schwendener, Norma. *Enriched teaching of physical education in the high school,* p. 59-62. Columbia Univ, Teach Col, Bur of Publ, New York City, 1929
Lists the names and addresses of firms which manufacture and sell types of equipment used in physical education activities. In other sections of the book similar lists are furnished for individual sports, as archery, golf, etc.

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XI. Space Provisions and the Layout and Equipment of the Interior Divisions of the Building

3013. Coffin, H. Errol. "Logic in the planning of elementary schools." *Am Sch Bd J* 80:57-63 My '30. plans, il

A discussion of basic and subtle elements of school standards that should be considered to achieve economic and esthetic results. A number of schools are used as illustrations.

3014. Fearon, J. E. "What teachers want in school buildings." *Am Sch Bd J* 76:76, 165 Ja '28

Report of a study of teachers' opinions, suggestions, and criticisms regarding buildings. A number of features are mentioned.

3015. Goldthorpe, J. Harold. "How 94 schools divided their floor area." *Nation's Sch* 8:51-8 S '31

Study of space provisions in the plans of 94 junior-high-school reproductions in 20 volumes of the *American School Board Journal* from 1920 to 1929, inclusive.

3016. Gump, Ohmer Pauldin. *A study of the interior arrangements of the junior high school buildings of Ohio.* Master's Thesis, Ohio State Univ, Columbus, 1928. 82 p.; abstract in *Bul of Dept of Sec-Sch Prin of the N.E.A.*, no. 39, p. 119-21, Ja '32

A study of the space provisions for various departments in 74 junior-high-school buildings of Ohio.

3017. Irons, G. E. "Method of figuring normal enrollment capacity of a junior high school." *Am Sch Bd J* 77:48, 134 O '28

Definite instructions for figuring normal working capacity.

3018. Mays, S. S. *Efficiency in high school building layout and arrangement.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, 1928.

3019. Pittenger, B. F. "A study of space provisions in new junior high schools." *Nation's Sch* 1:31-7 Je '28; 2:33-8 Jl '28

Data from a study of 39 floor plans that appeared in the *American School Board Journal* from January, 1921, to December, 1925.

3020. "How room space may be assigned in an elementary school." *Nation's Sch* 2:45-9 O '28

A critical analysis of 70 elementary-school floor plans on the basis of use to be made of the various rooms.

3021. Powers, Elmer Walter. *Space provisions in the floor plans of elementary school and junior high school buildings in 1910, 1920, and 1930.* Master's Thesis, Univ of Chicago, 1931. 199 p

An analysis of the plans of school buildings erected at the three selected periods to determine the changes and trends in space provisions.

3022. Sexson, John A. "Modern school equipment." *Educ Bul* 17:260-3 Ja '31

Discusses the wise use of equipment and the need for increased information relative to equipment due to the decided increase in mechanical devices in everyday life.

3023. Shambaugh, C. G. "How school planning reveals the trend of the curriculum." *Nation's Sch* 3:33-6 Mr '29

A study of 58 floor plans for the purpose of showing the number and kind of space provisions.

3024. Spohn, A. L. *Utilization of space in high school building plans.* Master's Thesis, Univ of Chicago, 1929. 120 p.; also under title "Trends in space provisions in plans for high school buildings." *Sch R* 38:33-50 Ja '30

Study of 24 building plans for each of the years 1907, 1917, and 1927. Results showed that changes and rapid development took place in 1927, especially in commercial, home economics, health and comfort, and office rooms, and in miscellaneous provisions. Classrooms, library, auditorium, physical education rooms, and shops showed less changes. High correlation was found with Koos' data published in 1919.

3025. Younger, William Henry. *A study of space provisions in 64 high school building plans.* Master's Thesis, Univ of Texas, Austin, 1929

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STAIRS, CORRIDORS, AND EXITS

3026. *Challman, Samuel A. "Standards for stairways, corridors and exits in elementary school buildings." *Am Sch Bd J* 78:69, 144, 146 Je '29; 79:82, 84, 86, 88 D '29

List of state laws governing the standards of school buildings.

3027. *Hart, F. W. "Ramps versus stairways in school building construction." *Am Sch and Univ* 1930-31:69-72. il

Gives a comparison of ramps and stairways. Arguments for and against each are presented. Suggestions for the building of ramps are given.

3028. Mowery, H. Weaver. "Stair safety." *Am Arch* 138:64, 66, 112, 114 Jl '30. il

Discusses materials and proportions as factors in stair construction. Gives a table of risers and treads.

3029. Smith, Eugene Randolph. "Classroom and corridor arrangements for effective work." *Jr-Sr H Sch Clearing House* 4:195-8 D '29

Discusses standards for classrooms and corridors of school buildings.

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50	893	2268	4390
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WARDROBES AND LOCKERS

3030. *American School Board Journal.* "The need and value of steel lockers in schools." *Am Sch Bd J* 78:149 Je '29

Discussion of safety against fire and panic in the selection and installation of lockers.

3031. Keller, Paul G. W. "Saving space by tote boxes." *Am Sch Bd J* 76:80, 82 Je '28. il

Shows the economies made by providing tote boxes.

3032. Lane, Perley W. "Locker room, locker and padlock." *Am Sch Bd J* 81:79-81 Jl '30

A discussion of locker equipment, allocation of home rooms and locker rooms, details of administration of lockers, and kindred problems.

3033. Peery, Elmer J. "Boys' gymnasium locker and shower rooms." *Am Sch and Univ* 1932-33:173-6

Summary of the author's Master's Thesis study at the University of Southern California of 25 schools typical of Southern California. Sets up a series of recommended standards of construction and equipment.

3034. Ramsey, Josephine Reid. *The administration of locker systems in the secondary schools of California.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. tables, bibliog, 97 p.; abstract in *Annotated index of theses and dissertations in education*, p. 67. Univ of Southern California, Sch of Educ, Los Angeles, 1930

A study based on the replies to questionnaires on locker systems sent to several hundred high schools.

3035. Strayer, George D.; Engelhardt, N. L.; and Mort, Paul R. "Tentative standards for school locker administration." *Sch Executives M* 51:147-9, 179, 180 D '31

Detailed principles and standards governing lockers, their construction, and location.

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THE ACADEMIC ROOM

3036. Burdette, Lillian Shack. *Standard equipment of elementary classrooms.* Master's Thesis, George Peabody Col for Teach, Nashville, Tenn, 1929. 119 p

3037. Burwell, F. E. "Fall house cleaning." *English J* (H Sch ed) 19:654-6 O '30

Tells of the work of an English class in improving the appearance of a room. Many little changes made the room more attractive.

3038. Challman, Samuel A. "Standards for elementary schoolrooms." *Am Sch Bd J* 77:65, 122, 125-6, 128 O '28

A compilation of the standard requirements in regard to elementary school rooms in the various states. Includes such items as equipment, area of windows, paints, etc.

3039. *"Classroom comparisons." *Am Sch Bd J* 82:52-5 Ja '31. plans
Plans and elevations are given for typical classrooms of Los Angeles, Wisconsin, Chicago, Minnesota, Rochester, and New York State. Comparisons are also given of these six as to general dimensions, doors, clothes lockers, storage cases, blackboards, heating and ventilation practices, and lighting.

3040. "Typical elementary classroom." *Minn J Educ* 11:260-1 Mr '31. plans
A floor plan and inside elevation presents the various features of the modern classroom. The importance of hygienic foundation and safety in case of fire or emergency is stressed.

3041. *Challman, Samuel A., chairman. "Classroom plans and seating; blackboards and exhibition boards; natural and artificial illumination of class rooms and corridors; stairways, coat rooms, corridors, and exits." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:55-78. plans, mim
Standards worked out by the Committee on Standards of the National Council on Schoolhouse Construction.

3042. Cook, William Adelbert. *High school teaching*, p. 68-9, 102-3, 133, 167, 203-5, 240-1, 276-7, 302-4, 332-3, 357, 393. C. A. Gregory Co., Cincinnati, O., 1929
Discusses essential instructional equipment for each of the groups of subjects taught in high schools.

3043. Donovan, John J. "Classroom standards of leading school architects and school construction specialists." *Am Sch Bd J* 79:50-1 Ag '29
Shows in tabular form standards of 34 leading school architects for certain building features.

3044. Drake, G. "Preparing the room for activity work." *Sierra Educ News* 26:39 S '30
Tells of equipping a room in a practical way for activity work.

3045. Engelhardt, N. L. "Planning elementary classrooms." *Arch Rec* 69:429-34 My '31. plans, il
Discusses features of the classroom that will make it more attractive and more serviceable. Illustrates with a plan of the Fisher Avenue School, White Plains, New York.

3046. Goodwin, Hugh R. "The use of bulletin boards." *Gen Sci Q* 12:340-2 N '27
Brief statement of the requirements of the bulletin board for the science department.

3047. Holcomb, Esther Lolita. "The English laboratory." *English J* 17:50-2 Ja '28
Describes a laboratory fitted for the comfort and work of students engaged in English work.

3048. Johnson, Martha I. "Possibilities in the English room for creation and contentment." *English J* (H Sch ed) 20:236-7 Mr '31
Suggestions for "dressing up" the English room.

3049. Koestler, Terese F. "Does atmosphere count?" *English J* (H Sch ed) 20:230-4 Mr '31
Describes rooms so arranged as to give the proper setting to work of different kinds.

3050. *Long, Raymond V. "Planning classrooms for elementary schools." *Am Sch and Univ* 1932-33:207-10. diag
Presents a list of 14 standards for classrooms and three typical plans designed to meet these standards.

3051. McCuen, Theron L. "Some distinctions between the conventional and the wide short classrooms." *Am Sch Bd J* 78:58 Ap '29
Report of a study of some features of the "wide-short" and "long-narrow" classrooms.

3052. McGinnis, W. C. "The standard elementary classroom." *Sch Executives M* 50:220-2 Ja '31
Presentation of evidence for and against the 35-pupil maximum capacity standard for elementary classrooms.

3053. Muir, S. T. "Ideal English classroom." *Neb Educ J* 11:148 Mr '31. il

3054. Price, Roy Seldon. "Classroom innovations in the Horace Mann School, Beverly Hills, California." *Am Sch and Univ* 1931-32:302-4. plans, il
Describes classrooms and wardrobes in the Horace Mann School. The floor plan is shown.

3055. Rapeer, Louis W. "The wide-short classroom." *Am Sch Bd J* 77:36 D '28
Presents the advantages of the "wide-short" over the "long-narrow" school room.

3056. Shigley, Arthur R. "Classroom refinements." *Am Sch Bd J* 75:63, 144 N '27. il
Discussion of the trend toward convenience and beauty of architecture in school buildings.

3057. "The new English classroom gives life to an old subject." *Nation's Sch* 4:59-63 Jl '29. plans, il
A description of rooms in a number of buildings which provide a proper environment for the subjects to be taught in them.

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53	368	2239	4158
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LABORATORIES

3058. Allen, W. C. "Workshop of science." *Progressive Educ* 8:531-3 O '31
Description of a science laboratory in a grade school.

3059. Allerdice, Ruth. "A school greenhouse." *Sch Sci and Math* 30:502-4 My '30
Description of a 10' x 27' greenhouse built along the south side of Shortridge High School at Indianapolis.

3060. *American School Board Journal.* "Determining essential school equipment." (ed) *Am Sch Bd J* 82:65 Je '31
States that the choice of equipment should be based upon the pupils' use regardless of economies which may be effected thru uniform buying.

3061. Blanchard, W. M. "An outstanding high school department of chemistry." *J Chem Educ* 5:1571-6 D '28. il
Description of the equipment in the Shortridge High School of Indianapolis.

3062. Blanpied, L. "Preparing the child for science." *Progressive Educ* 8:501-6 O '31
Description of a science room and its equipment in the Winbrook School.

3063. Brown, O. E. "Can the small high school meet the needs of a modern science laboratory equipment." *Calif Q Sec Educ* 6:384-5 Je '31; abstract in *J Chem Educ* 8:2087 O '31
Points out that the ability of small high schools to meet the needs of modern science laboratory equipment depends upon the science courses to be offered, the method of teaching, the field or content covered, and the objectives or aims. States that for small schools with less than 100 enrollment only one laboratory is needed, while only schools with an enrollment of over 500 need separate laboratories for each science.

3064. Carpenter, Clifford D. "Storeroom keeping for a department of chemistry." *Am Sch and Univ* 1930-31:444-5. il
Discussion of the chemistry storeroom; its arrangement and administration.

3065. Carpenter, W. W. "Safety in the science laboratory." *Sch Sci and Math* 29:609-10 Je '29
Suggests a safety code for the science laboratory. The fire hazard is stressed.

3066. Condon, J. J. "Instructional material for the small laboratory." *H Sch Teach* 7:148-50 Ap '31
Discusses the needs of the small laboratory and suggests materials needed.

3067. Coyle, G. L. *The construction and equipment of chemical laboratories.* Chemical Found, Inc., New York City, 1930. 340 p.; reviewed in *J Chem Educ* 7:2210 S '30
This report of the National Research Council Committee gives detailed suggestions regarding high-school, college, and university laboratories and makes many specific suggestions concerning heating, lighting, ventilating, and equipping all of the kinds of rooms that are to be found in a chemical laboratory.

3068. Craig, Gerald S. "The place of the science workroom in the elementary school program." *Sci Educ* 14:582-8 My '30
States the purpose and guiding principles in planning the science workroom. Outlines three types of organization for instruction and the influence of each on the planning of the science workroom.

3069. Cushman, C. L. "The design and equipment of junior-high-school science rooms." *Jr-Sr H Sch Clearing House* 4:494-7 Ap '30
Discusses equipment of science rooms in keeping with the aims of the subject.

3070. Dewey, S. L. "Science at the branch school." *Sch and Home* 14:13-18 Mr '30
Discusses the laboratory as an approach to science.

3071. Essig, R. J. "Science in the grades." *Chicago Sch J* 14:76-7 O '31. diag
Describes the study of the electro-magnet and the permanent magnet in the grades. Many practical projects were developed as a result of this study.

3072. Gilbert, H. and Gilbert, W. "Air compressor for small laboratories." *Sch Sci and Math* 29:1002 D '29. fig
Gives directions for installing this piece of permanent equipment.

3073. Glisson, C. O. "Pupil-made *vs.* factory-made apparatus." *Sch Sci and Math* 31:145 F '31
Defends purchasing apparatus instead of having pupils make it.

3074. Greve, A. M. "Life science at Bronxville." *Progressive Educ* 8:514-17 O '31. il
Describes the surroundings and equipment useful for science instruction in the Bronxville school.

3075. Gross, H. W. "Science laboratories in a central high school." *N Y State Educ* 17:928-9 Je '30. il
Describes the equipment of the science laboratories in the Valley Stream Central High School in New York.

3076. Hacker, Ralph Evans. "Planning rooms for general science." *Am Sch and Univ* 1931-32:438-40. plans, il
Shows different plans for general science rooms and discusses the relative merits of these. Discusses equipment.

3077. Harris, Lucile Berg. "The science department of the Haven Intermediate School, Evanston." *Am Sch and Univ* 1928-29:301-2. il
A good description of a rather complete laboratory.

3078. Hart, F. W. and Givens, Willard E. "Science laboratories in secondary schools." *Am Sch and Univ* 1930-31:435-8. plans
Gives suggestions for the arrangement of science departments.

3079. *Hill, G. Albert. "Laboratory equipment and laboratory instruction." *J Chem Educ* 7:1878-86 Ag '30
Evaluates laboratory equipment and physical conditions in terms of health, comfort, and efficiency of the student.

3080. Hillis, Clyde C. *Tentative standards for science equipment for Indiana high schools.* Master's Thesis, Indiana Univ, Bloomington, 1928. 113 p
Sets up standards of equipment needed for physics and chemistry and suggests the number to have of each item.

3081. Holy, T. C. and Sutton, D. H. *Lists of essential apparatus for use in high-school sciences.* Ohio State Univ, Univ Studies, Bur of Educ Res Monographs, no. 12, Columbus, 1931. 32 p.; abstract in *Educ Res Bul* 10:171-7, 196 Ap 1 '31; reviewed by Elliott R. Downing in *Educ Res Bul* 10:352-4 S 30 '31
Lists essential equipment for the teaching of the different sciences in high school.

3082. Hyde, G. H. "Home-made apparatus for the physics class." *Sci Educ* 15:159-74 Mr '31. il
Compares the cost of home-made apparatus with that of factory-made. Gives instruction for making some articles.

3083. Janney, M. "General science equipment as an aid to teaching." *Baltimore Bul Educ* 8:36-7 N '29. il
Describes the equipment of general science laboratories in the junior high schools of Baltimore.

3084. *Jensen, J. H. and Glenn, Earl R. "An investigation of types of classrooms for chemistry and other sciences in small high schools." *J Chem Educ* 6:634-64 Ap '29. plans, il
Report of a survey during 1924-27 in the state of South Dakota. Specifications for the science room are given and lists of equipment suggested. Floor plans are compared.

3085. Kennedy, E. V. "Equipment of the biology laboratory in a small high school." *Sch Sci and Math* 28:414-17 Ap '28
Discussion of equipment and a list of essentials for the small high school.

3086. McGuinn, Dorothy H. "Modern biology." *Bul H Points* 13:28-31 Ap '31
The ideal room for the teaching of biology is discussed in the first part of this article.

3087. Mattern, L. W. "Minimum equipment for high school chemistry." *J Chem Educ* 5:749-54 Je '28
A committee report submitted to the Senate of Chemical Education of the American Chemical Society.

3088. "High school laboratories for chemistry." *Am Sch and Univ* 1930-31:439-43. plans, il
Discusses types of laboratories, location of rooms, and equipment.

3089. Monahan, A. C. "The high school science problem." *Am Educ Digest* 47:489-92 Jl '28. il
A discussion of the danger of economy measures in connection with laboratory equipment; also the peculiar requirements of science for equipment and efficient utilization of space.

3090. *"The high school science laboratory." *Am Sch and Univ* 1928-29:296-301. il
Discussion of laboratory equipment, its choice, cost, and storage.

3091. "Equipping the science laboratory." *Sch Executives M* 49:30-1 S '29
Suggests a combination laboratory which serves for more than one science and for a lecture room as well as for experimentation.

3092. "Selecting apparatus for the science department." *Am Sch Bd J* 79:42 O '29
Report of a study of methods employed by school boards in the purchase of apparatus and supplies. A suggested plan is given.

3093. "The cost of the high school science department." *Sch Sci and Math* 30: 1025-32 D '30
Data given as to the cost of apparatus and equipment for various sciences, industrial arts, home economics, and other practical courses.

3094. "Permanent equipment for high school sciences." *Sch Sci and Math* 31: 50-7 Ja '31
A discussion of the cost of permanent apparatus for biology, physics, chemistry, and general science in the high school.

3095. *"Planning science laboratories for high schools." *Am Sch Bd J* 82:66, 138; 124 Ja, F '31. plans, il
Reports a study of science classrooms and laboratories and presents standards for high schools of various sizes for chemistry, physics, general science, and biology laboratories.

3096. Obourn, Ellsworth S. "The effective use of practical equipment in a physics course." *Sch Sci and Math* 28:275-80 Mr '28
Discussion of the use of practical equipment rather than specialized equipment.

3097. Powers, S. R. "The selection and purchase of equipment and furnishings for laboratories." *Am Sch and Univ* 1929-30:343-6
Floor plans of outstanding science departments are given. Lists equipment for general science, general biology, chemistry, and physics.

3098. Powers, Samuel Ralph and Mauzer, J. G. "Equipment for school science rooms." *Am Sch and Univ* 1931-32:440-2. il
Gives lists of equipment for science rooms in elementary, junior high, and senior high schools.

3099. Rutledge, R. E. and Joyal, Arnold. "Equipment standards for general science." *Calif Q Sec Educ* 7:99 O '31
Report of a study by the Oakland, California, Public School Research Department with a view to revising furniture and equipment standards.

3100. Seubert, Arthur. "Science laboratory equipment for junior and senior high schools." *Jr-Sr H Sch Clearing House* 4:217-20 D '29
A discussion of factors influencing the selection of science laboratory equipment. Individual subject and combination laboratories are included.

3101. Shigley, Arthur R. "Designing a science laboratory for the small high school." *Nation's Sch* 3:69-72 F '29. plans, il
Description of the science laboratory—one for general work—in the high school at Almont, Michigan.

3102. State of Massachusetts. *Report on equipment, apparatus, and materials for teaching science in the secondary schools of Massachusetts.* State Bd of Educ, Div of El and Sec Sch, bul no. 8, Boston, 1930. 4 p
Deals with equipment and apparatus for the teaching of science in the smaller high schools. Takes up the arrangement of rooms, discusses the installation and use of apparatus and equipment, and offers a list of suggestive materials and apparatus for teaching the subject.

3103. State of New York. *Suggested list of science apparatus for biology.* Univ of the State of New York, Albany, 1929. 8 p

3104. *Suggested list of science apparatus for chemistry.* Univ of the State of New York, Albany, 1929. 10 p

3105. *Suggested list of science apparatus for general science.* Univ of the State of New York, Albany, 1929. 7 p

3106. *Suggested list of science apparatus for physics.* Univ of the State of New York, Albany, 1929. 9 p

3107. *Suggested list of science apparatus for small high schools.* Univ of the State of New York, Albany, 1929. 30 p

3108. Underhill, O. E. "Home-made apparatus." *Sci Educ* 13:147-53 Mr '29. fig
Discusses the value of having students make apparatus and gives instruction for making some equipment.

3109. Van Aller, H. H. "Science and shop at Park School." *Progressive Educ* 8:520-2 O '31. il
Describes the work done and equipment used in the science work of this Cleveland school.

3110. Vander Eike, Paul. "A high school science hall." *Sierra Educ News* 24:22 N '28
A description of the Kern County Union High School at Bakersfield, California. The science unit receives particular attention.

3111. Vilbrandt, F. C. and Dobbins, J. T. "A new chemical laboratory fume duct system." *J Chem Educ* 5:589-94 My '28. il
Discussion of the various methods in use and detailed description and statement of advantages of the *D-V* system.

3112. Von Gruenigen, Ernest. *The housing of general science in the representative high schools of California.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. 84 p.; abstract in *Annotated index of theses and dissertations in education*, p. 84. Univ of Southern California, Sch of Educ, Los Angeles, 1930
The author made personal investigation in 59 schools and evaluated the facilities in terms of aims, methods, and content of the work.

3113. Wagner, Clarence K. *Plans and layout for a high school science department.* Master's Thesis, Univ of Pennsylvania, Philadelphia, 1928. 232 p
Plans for science departments of high schools with an enrollment of about 400 pupils.

3114. Watkins, Ralph K. "Equipment for teaching physics in northeast Missouri high schools." *Sci Educ* 13:199-210 My '29
Report of a study of 42 high schools of northeastern Missouri as to the equipment available for the teaching of various phases of physics.

3115. Welles, Paul T. *A standard layout for science rooms for fourth, fifth, and sixth grades in a platoon school.* Master's Thesis, Univ of Southern California, Los Angeles, 1931. tables, fig, bibliog, 113 p
A study of layouts for science rooms in three cities, with evaluations in terms of the courses of study followed.

3116. Woodring, Maxie N.; Oakes, M. E.; and Brown, H. Emmett. *Enriched teaching of science in the high school*, p. 144-55. Columbia Univ, Teach Col, Bur of Publ, New York City, 1928.
Contains a short bibliography on science equipment and supplies, and furnishes a rather complete list of supply and equipment houses from which much free and low cost demonstration material may be secured.

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61	1712	2666	4186
87	1737	2826	4265
89	1858	3031	
158	1885	3046	

LIBRARIES

3117. Ambrose, Curtis Emory. *A study of high school libraries with special reference to Indiana.* Master's Thesis, Indiana Univ, Bloomington, 1928. 95 p
Chapter II deals with the relation of the library to the high-sheool building and Chapter III with the equipment of the library.

3118. American Library Association. "School libraries." In *A survey of libraries in the United States*, vol 3, Ch. V, p. 271-307. Am Library Assn, Chicago, 1927
Report of a questionnaire study of the library facilities and practices of 1,107 public schools in the United States.

3119. American Library Association: Education Committee. *School library yearbook*, no. 4. American Library Association, Chicago, 1931. 278 p
Contains the school library standards and department rulings of various states and regional standardization agencies.

3120. *American School Board Journal.* "Adopt library standards for schools." *Am Sch Bd J* 76:97 Ap '28
New standards of the American Association of Colleges and Secondary Schools of the Southern States for libraries for all schools.

3121. "Architecture for libraries." *Am Sch Bd J* 78:44 Ja '29
American Library Association's 11 "points of agreement" as to essentials of a serviceable library building.

3122. "School library standards." *Am Sch Bd J* 80:78, 80 F '30
Gives the standards under consideration by the Northwest Association of Secondary and Higher Schools as to equipment and books.

3123. "A principal's estimate of the school library." *Am Sch Bd J* 80:152 Mr '30
A plea that the library be considered an essential part of a complete educational system. Suggestions as to physical requirements and selection of books for the library.

3124. Arden, Harriette. "The DeWitt Clinton High School library." *Library J* 55:309-10 Ap 1 '30. il
Gives a brief description of the library of a New York City high school. The enrollment of the school is 8,600.

3125. Bacon, Mary R. "The vertical file in the high school library." *H Sch* 6:58-9 D '28

3126. Beatty, Willard W. "Planning the elementary school library." *Am Sch and Univ* 1930-31:306-10. plans, il
A description of the public school building at Bronxville, New York, which is built around the library as a nucleus.

3127. Bonsfield, Humphrey Gambier. "Present standards and equipment of the high-school library." *Jr-Sr H Sch Clearing House* 4:232-6 D '29
Discusses the development of the high-school library movement and the equipment necessary for most effective use.

3128. Bostwick, Arthur E. "The librarian's ideas of library design." *Arch Forum* 47:507-12 D '27
Discusses provisions for expansion, staff quarters, and beauty and utility.

3129. "Combining the school library and the public library." *Am Sch and Univ* 1929-30:283-6. il
Discusses location, size, and equipment of school libraries.

3130. Braun, O. E. "Stack lighting." *Wis Library Bul* 24:41-2 F '28

3131. Bulletin of the American Library Association. "School library planning chart." *Am Library Assn Bul* 25:157 Ap '31
A chart giving suggestions concerning floor area, shelving footage, etc., for different types of schools.

3132. Burgess, Helen M. "The Beaver Country Day School Library." *Library J* 53:442-5 My 15 '28. il
Describes the library of a private school in one of the suburbs of Boston. The equipment is also described.

3133. Campbell, Doak Sheridan. *Libraries in the accredited high schools of the Association of Colleges and Secondary Schools of the Southern States*, p. 27-30. George Peabody Col, Nashville, Tenn., D '30
Survey of the equipment in school libraries in the southern states is reported on pages 27 to 30. Appendices give detailed data.

3134. Childs, Frank A. "Planning libraries for elementary and junior high schools." *Am Sch Bd J* 82:64 Ja '31. plans, il
Discusses trends in room arrangement and in equipment. Shows a number of libraries as illustrations.

3135. "The school library and its part in enriching the curriculum." *Nation's Sch* 7:33-40 Je '31. plans, il
Plans and illustrations of elementary school libraries.

3136. Childs, W. P. "Some details of school libraries in southern California." *Am Sch Bd J* 78:56, 162 Ja '29
A report of an investigation which sought to determine the physical characteristics of 25 high schools in southern California and to analyze the information collected.

3137. Clevenger, Arthur W. and Odell, Charles W. *High school libraries in Illinois.* Univ of Illinois, Bur of Educ Res, Bul of the Col of Educ, no. 57, p. 27-30 (Univ Bul, vol 29, no. 4), Urbana, S 11 '31

In this division the authors deal with the characteristics of library quarters, discussing size, location, heating, lighting, and general arrangements.

3138. Cole, Thomas R. "A well-integrated public school library." *Am Sch and Univ* 1932-33:214-16. plans, il

Describes the arrangement and equipment of the James Monroe Junior High School library suite in Seattle, Wash.

3139. Douglass, M. H. "Trends in school library organization and administration." *H Sch* 6:37-43 D '28

One section of this article deals with the school library room and its equipment.

3140. *Fargo, Lucile Foster. "Housing and equipping the school library." In *The library in the school,* Ch. IX, p. 211-67. Am Library Assn, Chicago, 1930

Discussion on the following topics: objectives, location, entrances, exits, number of rooms, dimensions, seating capacity, area, walls, built-in features, woodwork, floor, heating, ventilating, lighting, plumbing, decorating, equipment, workrooms, costs, examples of excellent planning, and tables of equipment costs.

3141. *The program for elementary school library service.* Am Library Assn, Chicago, 1930. 218 p

Chapters V, VI, and VII give sections on housing and equipment for different types of libraries. Appendix I deals with specifications for housing and equipping the elementary library.

3142. Fullwood, Marjorie, chairman. "Junior high school libraries in California." *Calif Q Sec Educ* 4:329-34 Je '29; also *Sch Library Yearbook* (no. 3) 1929:65-73

Report of a study of 57 junior-high-school libraries in California as to seating capacity, workroom, storeroom, etc. The study was conducted by a committee of the California School Library Association.

3143. Giese, William C. "The high school library." *Am Sch Bd J* 76:74, 159 Ja '28. plan

Discussion of the library as the center of activities of the modern school. Physical essentials are pointed out. Plans are given.

3144. Green, Leicester G. "An experiment in library-study room." *N Y State Educ* 18:769-70, 821-3 Ap '31. il

Tells of the relation of the arrangement of the building to the use of the library-study room plan and suggests the arrangement of equipment.

3145. Harbaugh, Leonard Earl. *A study of the library facilities of the high schools of Fayette County, Pennsylvania.* Master's Thesis, Univ of Pittsburgh, 1930

Reports a study of library facilities from the points of view of housing and equipment, contents, use, personnel in charge, and financial support.

3146. Highsmith, J. Henry, chairman. "Standards for high-school libraries of the Southern States." *Libraries* 33:111-12 F '28

Gives standards of the Association of Colleges and Secondary Schools of the Southern States.

3147. Hill, Andrew P. "The modern high school and its library." *Nation's Sch* 5:25-34 Mr '30. plans, il

A discussion of the essentials of library organization, planning, and equipment. Illustrations are taken from different California high schools. A library score card is given.

3148. "The modern high school and its library." *Wilson Bul* 4:435-41 My '30

Tells of types of libraries and discusses a number of construction problems. Furnishings are also considered.

3149. Horrocks, Arthur J. "The building of fine library furniture." *Library J* 55:202-4 Mr 1 '30

Describes the essentials and manufacturing of good library furniture. Discusses selection of lumber, veneers, and the building process.

3150. Howard, Blanche. "Instituting high school library service." *Wilson Bul* 5:584-5 My '31

Gives, among other things, some statements relative to the type of room that should be used.

3151. Huff, William Frederick. *A study of the provisions made for libraries in elementary schools of Southern California.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. 140 p.; abstract in *Annotated index of theses and dissertations in Education*, p. 41. Sch of Educ, Univ of Southern California, Los Angeles, 1930

Results of a study of practices concerning libraries in 28 elementary schools in Southern California. Information was secured thru visits and replies to questionnaires.

3152. King, William A. *The elementary school library.* Charles Scribner's Sons, New York City, 1929. 224 p

Chapter III deals with housing, furniture, and equipment. Other sections contain valuable suggestions on planning the elementary library.

3153. Lake, Estelle D., chairman. "A survey of California senior high school libraries." *Calif Q Sec Educ* 4:271-5 Je '28; also *Sch Library Yearbook* (no. 3) 1929:74-6

Report of a study of 254 high-school libraries as to seating capacity, workroom, type of shelving, and separation from study halls. The study was conducted by a committee of the California School Library Association.

3154. Lewis, Willard P. "The care of maps and atlases in the library." *Library J* 55:494-6 Je 1 '30. il

Describes filing equipment for maps and atlases.

3155. *Library Journal.* "Fourteen points on ventilation and lighting." *Library J* 53:92 Ja 15 '28

Gives 14 rules for good ventilation and lighting.

3156. *Library Occurrent.* "The administration of the high school library." *Library Occurrent* 9:48-50 Ap-Je '29

Discusses library room requirements for school libraries as given by the State Department of Public Instruction of Indiana in the *Administrative Handbook.*

3157. Linn, John H. "Branch city libraries in Topeka schools." *Am Sch Bd J* 78:42, 137 Mr '29. plans, il

The story of how Topeka met a library need by establishing branch libraries in its new, and in many of its old, school buildings.

3158. Loe, Edwin. *A survey of the needs and practices of the high school libraries in four-year high schools in North Dakota.* Master's Thesis, Univ of North Dakota, University, 1931. 87 p

Deals in part with the housing of high school libraries. States that the state law should compel all building plans to include adequate library facilities.

3159. *Logasa, Hannah. *The high school library.* D. Appleton and Co., New York City, 1928. 283 p

Chapter III deals particularly with the construction and equipment of the library, while other parts of the book contain many valuable suggestions for one who is planning a high-school library.

3160. Macdonald, Angus Snead. "Library lighting." *Library J* 56:208-10 Mr 1 '31. il

Discusses the best types of lighting, interior and exterior, for libraries.

3161. Madison, Elizabeth. "Physical standards for secondary school libraries." *Sierra Educ News* 24:17-18 O '28
Discussion of a number of plans and standards for high-school libraries.

3162. *Modern Public Buildings.* "Secondary-school libraries." *Modern Pub Bldgs* 2:24-5 F '28. il
Discussion of the library layout and standards recommended by the State of Pennsylvania.

3163. Morrison, R. F. "Determining proper air conditions for libraries." *Library J* 55:857-8 N 1 '30
Tells of the effect of papers, leather, and textiles, upon air conditions.

3164. *Nation's Schools.* "Making the high school library more useful." *Nation's Sch* 5:86 My '30
Suggestions by J. E. Edgerton and T. E. Osborn, high-school supervisors of Kansas, for a better use of school libraries.

3165. Perdue, Dan H. "The value of standards for high school libraries." *Am Sch Bd J* 82:136 Mr '31
A discussion of high-school library standards. The North Central Association standards are listed.

3166. Power, Effie Louise. "Planning and equipment." In *Library service for children*, Ch. VII, p. 123-52. Am Library Assn, Chicago, 1930; also "The organization and equipment of a children's room." *Children's Library Yearbook* (no. 1) 1929:15-21
Deals with children's rooms in public libraries but contains many suggestions on the planning and equipping of school libraries.

3167. Prouty, Louise. "Exhibits behind glass in library buildings." *Library J* 53:651-4 Ag '28
Describes the display cases for exhibiting in the Cleveland Public Library. The lighting of these is discussed.

3168. Ranck, Samuel H. "Ventilating and lighting library buildings." *Arch Forum* 47:529-52 D '27. plans, il
Special provisions necessary for proper ventilation and light in the library are discussed.

3169. Severance, Henry Ormal. "Housing and equipment." In *A library primer for high schools*, p. 11-12. Lucas Bros., Columbia, Mo., 1927
Describes standard shelving, tables, chairs, and desks.

3170. Smith, Faith E. "High school libraries in California." *Calif Q Sec Educ* 3:138-44 Ja '28
Report of a questionnaire study involving 268 senior high schools and 84 junior high schools. Comparison of California conditions with Mr. Certain's report as to seating capacity, size, etc.

3171. Tilton, Edward L. "Library planning." *Arch Forum* 47:497-506 D '27
Discusses size, provisions for expansion, reading rooms, shelving, work rooms, stacks, furniture, lighting, heating, ventilation, and decoration.

3172. "School libraries." *Library J* 55:250-4 Mr 15 '30. plans
Discusses the following in school libraries: location, light areas, finishes, shelving, and bulletin boards.

3173. Utts, George Wilson. *The high school libraries of Cambria County, Pennsylvania.* Master's Thesis, Univ of Pittsburgh, 1930.
Reports a study of the housing, equipment, and use of these libraries.

3174. Van Hise, I. N. "Use of the library in the geography work of the junior high school." *Jr-Sr H Sch Clearing House* 6:179-88 N '31
Discusses the library equipment necessary for proper junior-high-school work in geography.

3175. Walter, Frank K. "Random notes on metal book stacks." *Library J* 53:297-300 Ap 1 '28

Discusses a number of problems in connection with the erection of library stacks. Among these are safety factors, lighting, and materials.

3176. Way, Katherine. "Children's bookshelves." *Wilson Bul* 5:204-5, 214 N '30

Gives suggestions for making shelves suitable for children.

3177. Webb, William. "Delivery desks." *Library J* 55:199-202 Mr 1 '30

Discusses delivery desks for institutions of different sizes and tells of changes in the organization of the work which are calling for desk changes.

3178. Wilson, Martha. "School library score card." *Sch Library Yearbook* (no. 2) 1928:59-74

Score card and standards designed by the education committee of the American Library Association. Items 48 to 59 deal with room and equipment.

3179. *Wilson Bulletin for Librarians.* "School library standards." *Wilson Bul* 3:406-7 N '28

Sets standards for library room, furniture, shelving, and other equipment.

3180. Witmer, Eleanor M. "Notes on library planning in Denver public schools." *Library J* 53:205-10 Mr 1 '28. plans, il

Discusses the library as a school laboratory and gives the floor plans of a representative high school library. Pictures of a number of high school libraries are shown.

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ASSEMBLIES AND STUDY HALLS

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THE AUDITORIUM AND STAGE

3181. *American School Board Journal.* "Auditorium-gymnasium facilities for schools." *Am Sch Bd J* 82:133 Mr '31

Report of a study in 513 high schools in Ohio to determine the extent to which these schools are providing auditorium and gymnasium facilities.

3182. Barnes, J. B. "Place and function of the auditorium." *Platoon Sch* 5:44-6 S '31

Suggests standards for auditoriums and shows the need for them.

3183. Carey, P. C. "Stage lighting for schools." *Am Sch and Univ* 1929-30:270-1

Gives a number of details for stage lighting installation.

3184. Childs, Frank A. "Public school stages." *Am Arch* 139:28-31, 120-3 Mr '31. plans, il

Shows some school stages and gives valuable information relative to school stage construction and equipment.

3185. Cobaugh, Bruce. *The portable equipment of the high school stage.* Master's Thesis, Univ of Pittsburgh, 1930; also in *The graduate school abstracts of theses, researches in progress, and bibliography of publications,* p. 243-4. Univ of Pittsburgh, vol 27, bul no. 3, N 15 '30

Report of a study of portable stage equipment in 12 Pittsburgh high schools, including types of scenery used, cost of such equipment, and the methods used in the construction of stage scenery.

3186. Davison, Robert L. "Procedure in designing a theatre." *Arch Rec* 67:457-86 My '30. plans, il

Technical information relative to the construction of theaters in general.

3187. Farnsworth, Dean and Ward, Winifred. "Equipment and use of the Haven Intermediate School auditorium, Evanston, Illinois." *Am Sch and Univ* 1928-29:251-4. il

A description of this stage and of its mechanical equipment. Something is told also of its use.

3188. Frost, E. N. "Diagnosing the physical stage." *Drama* 19:149-51 F '29

Discusses types of stages and makes application to school stages.

3189. Fuchs, Theodore. *Stage lighting.* Little, Brown and Co., Boston, 1929. 500 p

The most applicable parts of this book deal with stage lighting equipment and control.

3190. Greeley, William Roger. "A high school auditorium for school and community use." *Am Sch and Univ* 1931-32:319-21. plans, il

Describes the high school at Woburn, Massachusetts, with particular stress on the auditorium.

3191. Hanway, H. F. "Small school auditorium." *N Y State Educ* 18:193-4 O '30

Tells of the use of school auditoriums and of their arrangement to fit this work best.

3192. Harter, M. "Buildings and equipment for the auditorium." *Platoon Sch* 4:165-8 D '30. diag

A description of the ideal auditorium, using features from different schools. A table gives cost of equipment.

3193. Kaucher, Dorothy. "New books." *Q J Speech* 15:429-30 Ag '29

Contains a critical review of three books on dramatics and facilities for dramatics, including the book by Krows on *Equipment for stage production.*

3194. Keen, Charles Barton. "The Richard J. Reynolds Memorial Auditorium of the Richard J. Reynolds High School at Winston-Salem, North Carolina." *Am Sch and Univ* 1928-29:255-6. il

A brief description of an auditorium which was planned to serve as a high-school auditorium and a civic auditorium.

3195. Knapp, V. "Special features in theatre construction." *Bldg Age* 52:61-3 J '30

3196. Krows, Edwin. *Equipment for stage production.* D. Appleton and Co., New York City, 1928. 152 p

This concise manual of scene building is complete in all its details from the construction of platform columns to the mechanics of painting and hanging curtains and drops. Gives clear working drawings.

3197. Lighthall, Vera. "Making the most of the auditorium stage in the school." *Nation's Sch* 6:45-8 N '30. il

Suggestions for improving the school stage and getting the most value out of what the school has in this respect.

3198. *McCandless, S. R. "Some suggestions on planning the stage, auditorium, and equipment for a school theatre." *Am Sch and Univ* 1932-33:217-21. diag
Gives a list of nine faults commonly found in school auditoriums used for dramatics and a list of 12 suggestions for making an auditorium useful for dramatics.

3199. *Nation's Schools.* "The optimum size of a gymnasium and auditorium." *Nation's Sch* 4:86 N '29
Attempts to answer the question "How large should our gymnasium be?"

3200. *Permaflector Lighting.* "Auditoriums vary in lighting requirements." *Permaflector Lighting* 4:13-15 Jl '30. plans, il
Discusses lighting in relation to architecture. Stage lighting is considered.

3201. Phillips, Ruth M. "Auditorium workshop." *Bul of Dept of Classroom Teach of the N.E.A.* (5th yearbook) 5:236-8 Je '30
Tells of the activities in the auditorium and the equipment necessary.

3202. Pichel, Irving. "The problem of the inadequate school stage." *Theatre M* 47:53-5 Mr '28
Discusses some problems of school stages and pays particular attention to visibility in his suggestions for planning.

3203. "More problems of the inadequate school stage." *Theatre M* 47:53-4 Ap '28

3204. Pickell, F. G. "Adequate auditorium stages for school and community use." *Am Sch and Univ* 1929-30:265-9. plans
Presents plans of some high school stages, criticizes them, and offers suggestions for their improvement.

3205. Porter, Merton R. "The great rooms—auditorium, gymnasium, pool, and cafeteria." *Jr-Sr H Sch Clearing House* 4:211-14 D '29
Discusses these four rooms and their place in the educational system.

3206. Sanford, Russel M. *The use of school auditoriums.* Pub Sch, Dept of Res, Oakland, Calif., 1930
Reports findings of a study of auditoriums in 139 elementary, junior high, and senior high schools.

3207. Selden, Samuel. *Scenery and lighting for school and little theatre stages.* Univ of North Carolina, Bur of Ext Bul, vol. 8, no. 7, Chapel Hill, D 1 '28. plates, il
Gives instructions for constructing and setting scenery and for painting and designing it. Lighting of the stage is discussed in some detail.

3208. Selden, Samuel, and Sellman, Hunton D. *Stage scenery and lighting.* F. S. Crofts and Co., New York City, 1930. 398 p
Discusses planning and production of scenery, and stage lighting and its effects.

3209. Shields, A. W. and Holy, T. C. "Auditorium-gymnasium facilities." *Educ Res Bul* 9:424-6 O 22 '30; also "Auditorium-gymnasium facilities in 513 Ohio schools." *H Sch Teach* 8:31-2 Ja '32
A study of the county high schools of Ohio to determine the extent to which they are providing auditorium-gymnasium facilities, and a classification by significant features.

3210. Simonson, Lee. "Some A, B, C's, of theatre architecture." *Arch Rec* 67:447-56 My '30. plans, il
Describes the general features of large theaters.

3211. *Smith, Milton M. "Dramatic equipment in schools and colleges." *Am Sch and Univ* 1928-29:230-4. il
A discussion of the principles of auditorium construction from the point of view of play production, including the stage and its details.

3212. **The equipment of the school theatre*, p. 29-76. Columbia Univ, Teach Col, Contr to Educ no. 421, New York City, 1930. il

A study of the present practice of stage equipment in school buildings. Designing the school stage is a part of the study. A checking list for a school theater is given.

3213. "Equipment for progressive school theatre." *Progressive Educ* 8:75-8 Ja '31. plans

Discusses effective stage arrangement and the equipment required.

3214. Soper, Wayne W. *The use of the elementary school auditorium in cities and villages under superintendents.* Univ of the State of New York, bul no. 990, Albany, F 15 '32. 64 p

Among other things the physical aspects of the auditorium are discussed. Location, entrances, lighting, heating, ventilation, stage, and equipment are considered.

3215. Thomas, Oren. "The auditorium-gymnasium for small schools." *Nation's Sch* 5:55-60 Ap '30. plans, il

Description of a detached auditorium-gymnasium unit at Elkader, Iowa, which serves a small twelve-year school.

3216. Ward, Winifred. "The school stage and its equipment." In *Creative dramatics*, Ch. XI, p. 225-44. D. Appleton and Co., New York City, 1930

Deals with height of stage, curtains, use of flats, screens, and lighting equipment. Plans and illustrations are given.

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SCHOOL SHOPS AND INDUSTRIAL BUILDINGS

3217. Adams, H. W. "Industrial arts in the Corvallis junior-senior high school." *Bruce's Sch Shop Annual* 1931:42-4

Shows how the Corvallis school plans to increase its floor space to meet the need of industrial arts and vocational education.

3218. American Type Founders Company. *The elementary printing outfit.* American Type Founders Co., Educ Dept, Jersey City, N. J. 15 p

Lists equipment necessary for teaching printing to small classes in the elementary schools.

3219. Backus, A. D. "Maintaining shop equipment." *Ind Educ M* 29:366-8 Ap '28

Presents a graphic method for showing the standard equipment for Newark, New Jersey, manual training shops.

3220. Badger, O. B. "Industrial arts at Tulsa, Oklahoma." *Bruce's Sch Shop Annual* 1931:52-5

A discussion of the factors considered in designing the junior-high-school shop at Tulsa, Oklahoma.

3221. Badger, O. B.; Hargis, Bryan W.; and Dewey, Donald E. "Planning a shop building for a junior high school." *Ind Educ M* 31:381-5 Ap '30. plans, il

Describes the Lowell Junior High School of Tulsa and gives the important factors in shop layout. Lists the general tools.

3222. Bailley, Albert A. "Unique method of supporting overhead shafting, shelving and stock racks, without damage to walls or ceiling." *Ind Educ M* 29:385-7 Ap '28. il

Describes a novel method of supporting overhead drive shafts and countershafts by iron pipe frame work instead of by fastening to the ceiling.

3223. Ball, Stewart F. "Reorganizing a unit shop into a general shop." *Ind Educ M* 32:324-6 Ap '31. plans, il

Gives a discussion of the rearrangement of the shops in changing to the general work. Equipment is listed.

3224. Bast, Herbert. "Planning and equipping the school upholstering shop." *Ind Arts and Voc Educ* 19:371-3 O '30

Detailed description of equipment required for the school upholstering shop.

3225. Bauersfeld, A. G. "Equipping and maintaining industrial arts departments in a large city school system." *Ind Arts and Voc Educ* 20:157-9 My '31

Explanation of the work in Chicago schools.

3226. Bawden, William T. "A coöperative study of plans for new shops." *Ind Educ M* 29:354-6 Ap '28

Tells of the reorganization of the shops of the Tulsa, Oklahoma, schools and of its effect upon arrangement of equipment.

3227. Bedell, Earl L. "Equipment for industrial mechanics in new cosmopolitan high schools." *Ind Arts M* 18:220-1 Je '29

Layout and equipment of the general shop of the Cooley High School, Detroit, Michigan.

3228. "Specifying equipment and supplies for school shops." *Ind Arts M* 19:163-7 My '30

List of equipment and suggestions for buying equipment for school shops.

3229. Bedell, Earl L. and Carpenter, Frank. "Layout of auto shop and laboratory." *Ind Arts and Voc Educ* 19:327 S '30

Plan only.

3230. Bennett, Charles A. "The industrial education equipment at Little Rock, Arkansas." *Ind Educ M* 29:375-9 Ap '28. plans, il

Describes the arrangement of a number of shops in the Little Rock High School. Lists of equipment are given.

3231. Bowman, Clyde A. "Trends in industrial education and their effect on school shops." *Nation's Sch* 5:35-41 F '30. plans, il

Shows how shops should be arranged to handle the complete range of pupil classification according to shop needs.

3232. Brace, George M. "Wall-racks for general tools." *Ind Educ M* 31:376-7 Ap '30. il

Describes an effective way of caring for tools.

3233. Bright, Jonathan. "Vocational education in Erie, Pennsylvania." *Bruce's Sch Shop Annual* 1931:56-64

The building plans for industrial arts and vocational education in Erie, Pennsylvania.

3234. Bruce Publishing Company. "Woodworking." *Bruce's Specification Annual* 1928:9-68. plans, il
Detailed description of layouts and equipment for woodworking in elementary, junior-high, senior-high, technical, trade, vocational, and part-time schools.

3235. "Printing." *Bruce's Specification Annual* 1928:103-36. plans, il
Detailed description of layouts and equipment for printing in elementary, junior-high, senior-high, technical, trade, vocational, and part-time schools.

3236. "Electricity." *Bruce's Specification Annual* 1928:142-58. plans, il
Layouts and equipment for electrical courses in high schools and vocational trade schools.

3237. "Auto mechanics." *Bruce's Specification Annual* 1928:159-84. plans, il
Detailed description of layouts and equipment for teaching of auto mechanics in high schools and vocational trade schools.

3238. "Drafting." *Bruce's Specification Annual* 1928:193-207. plans, il
Detailed description of rooms and equipment for the teaching of drafting.

3239. "Sheet metal work." *Bruce's Specification Annual* 1928:216-27. plans, il
Description of rooms and equipment for sheet metal work in high schools and trade schools.

3240. "Metal working." *Bruce's Specification Annual* 1928:232-50. plans, il
Layouts and equipment for machine shops in elementary, high, and trade schools.

3241. "Woodworking—elementary school." *Bruce's Specification Annual* 1929:37-44
Housing problems confronting those who must administer the subject of woodworking in the elementary schools from the fifth to the eighth grade inclusive.

3242. "Woodworking—junior high school." *Bruce's Specification Annual* 1929:44-5
The factors considered in planning a woodworking shop for a junior high school.

3243. "Woodworking—senior high school." *Bruce's Specification Annual* 1929:55-6
Shop layouts for woodworking in the senior high school.

3244. "Woodworking—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:67-77
Shop layouts and some problems to be considered in planning woodworking rooms for technical high and full-time vocational schools.

3245. "Woodworking—part-time vocational school." *Bruce's Specification Annual* 1929:77-82
The planning of shops and recitation rooms, which may be used jointly for drawing and class recitations, for woodworking in part-time vocational schools.

3246. "Metal working—elementary school." *Bruce's Specification Annual* 1929: 141-2
The use of the woodworking shop in the elementary school for metal work.

3247. "Metal working—junior high school." *Bruce's Specification Annual* 1929: 143-7
A study of the three types of shop layouts found in various schools.

3248. "Metal working—senior high school." *Bruce's Specification Annual* 1929: 147-53
Planning shop layouts for metal-working in the senior high school.

3249. "Metal working—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:153-8
Shop plans showing how various technical and trade schools have planned their shops for metal work.

3250. "Metal working—part-time vocational school." *Bruce's Specification Annual* 1929:158-61
Shop layouts for part-time vocational schools.

3251. "Auto mechanics—junior high school." *Bruce's Specification Annual* 1929: 196-200
General shop and individual or specific shop layouts used for auto mechanics in the junior high school.

3252. "Auto mechanics—senior high school." *Bruce's Specification Annual* 1929: 200-6
Special features of the auto mechanics shop for senior high schools.

3253. "Auto mechanics—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:206-13
Typical shop layouts for auto mechanics in the technical high and full-time vocational schools.

3254. "Auto mechanics—part-time vocational school." *Bruce's Specification Annual* 1929:213-18
Plans of the two types of schools for auto mechanics in part-time vocational schools.

3255. "Drafting—elementary school." *Bruce's Specification Annual* 1929:232
The use of the manual training rooms for drafting in the elementary school.

3256. "Drafting—junior high school." *Bruce's Specification Annual* 1929:232-8
Shop layouts for drafting in the junior high school.

3257. "Drafting—senior high school." *Bruce's Specification Annual* 1929:238-42
The layout of the drafting room in typical senior high schools.

3258. "Drafting—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:243-4
Typical drawing rooms in technical high and full-time vocational schools.

3259. "Drafting—part-time vocational schools." *Bruce's Specification Annual* 1929:245-6
A brief survey of some of the trades requiring drawing and shop layouts for drafting rooms in part-time vocational schools.

3260. "Sheet-metal work—junior high school." *Bruce's Specification Annual* 1929: 261-4
Shop layouts for sheet-metal work that illustrate typical schools.

3261. "Sheet-metal work—senior high school." *Bruce's Specification Annual* 1929: 265-6
A study of shop layouts showing that there is little uniformity.

3262. "Sheet-metal work—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:267
A typical example of a sheet-metal shop.

3263. "Sheet-metal work—part-time vocational school." *Bruce's Specification Annual* 1929:267-9
Shop layouts for part-time vocational schools.

3264. "Printing—elementary school." *Bruce's Specification Annual* 1929:280-3
Illustration of printing shops found in the Indianapolis schools.

3265. "Printing—junior high school." *Bruce's Specification Annual* 1929:283-91
Printshop layouts illustrating the most important features to be considered for the junior high school.

3266. "Printing—senior high school." *Bruce's Specification Annual* 1929:292-300
Well-arranged printing layouts found in typical high schools.

3267. "Printing—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:300-4
The general features which should be considered in the layout of any printing shop.

3268. "Printing—part-time vocational schools." *Bruce's Specification Annual* 1929:304-10
Shop layouts that meet the two-fold purpose of the part-time vocational school.

3269. "Electrical section—junior high school." *Bruce's Specification Annual* 1929:322-7
Plans illustrating some well-arranged junior-high-school electrical shops.

3270. "Electrical section—senior high school." *Bruce's Specification Annual* 1929:327-30
Senior-high-school electrical shops that can be used with fair success for several purposes.

3271. "Electrical section—technical high and full-time vocational schools." *Bruce's Specification Annual* 1929:330-4
Electrical shops for the unit type of instruction.

3272. "Electrical section—part-time vocational school." *Bruce's Specification Annual* 1929:334-5
General layout shops that are adaptable for special phases of work.

3273. "General shop section." *Bruce's Specification Annual* 1929:345-57
Plans of general shop layouts for junior and senior high schools.

3274. "Typical vocational schools." *Bruce's Specification Annual* 1929:362-72
Floor plans for three typical vocational schools.

3275. "Woodworking-shop layouts." *Bruce's Sch Shop Annual* 1930:73-7
Layouts for certain kinds of woodworking shops. Plans only.

3276. "Metal-working shop layouts." *Bruce's Sch Shop Annual* 1930:144-7
Plans for junior- and senior-high-school metal-working shops. Plans only.

3277. "Auto-mechanics—shop layouts." *Bruce's Sch Shop Annual* 1930:179-82
Junior-high, senior-high, technical, trade, and vocational school shop plans. Plans only.

3278. "Sheet-metal-shop layouts." *Bruce's Sch Shop Annual* 1930:210-12
Plans of sheet-metal-shop layouts for junior-high, senior-high, trade and vocational schools. Plans only.

3279. "Electrical-shop layouts." *Bruce's Sch Shop Annual* 1930:219-22
Electrical-shop layouts for junior-high, senior-high, technical, and vocational schools. Plans only.

3280. "Printshop layout." *Bruce's Sch Shop Annual* 1930:232-4
Printshop layout for intermediate, junior-high, senior-high, technical, trade, and vocational schools. Plans only.

3281. "General-shop and home-mechanics-shop layouts." *Bruce's Sch Shop Annual* 1930:249-51
Shop plans for intermediate schools, junior and senior high schools and vocational schools. Plans only.

3282. "Woodworking-shop layouts." *Bruce's Sch Shop Annual* 1931:78-9
Includes only plans for some woodworking-shops.

3283. "Metal-working shop layouts." *Bruce's Sch Shop Annual* 1931:133-6
Includes only plans for metal-working shops.

3284. "Electrical-shop layouts." *Bruce's Sch Shop Annual* 1931:186-7
Includes only plans for electrical-shop rooms.

3285. "Sheet-metal-shop layouts." *Bruce's Sch Shop Annual* 1931:204-5
Includes only plans for sheet-metal shop rooms.

3286. "Printshop layouts." *Bruce's Sch Shop Annual* 1931:215-17
Includes only plans for printshop rooms.

3287. "Automotive shop layouts." *Bruce's Sch Shop Annual* 1931:239-40
Includes only plans for automotive shop rooms.

3288. "Woodworking layouts." *Bruce's Sch Shop Annual* 1932:59-61
Junior-high, senior-high, continuation, and trade school plans. Plans only.

3289. "Metal-working and sheet-metal-shop layouts." *Bruce's Sch Shop Annual* 1932:100-1
Metal-working and sheet-metal-shop layouts for senior-high and vocational schools. Plans only.

3290. "Electrical-shop layouts." *Bruce's Sch Shop Annual* 1932:129-30
Junior- and senior-high-school electrical-shop layouts. Plans only.

3291. "Automotive-shop layouts." *Bruce's Sch Shop Annual* 1932:152-4
Automotive-shop plans for high, vocational, and trade schools. Plans only.

3292. "Printshop layouts." *Bruce's Sch Shop Annual* 1932:164
Printshop layouts for high and vocational schools. Plans only.

3293. "General-shop layouts." *Bruce's Sch Shop Annual* 1932:172
High and continuation school general-shop plans. Plans only.

3294. Callow, H. I. and others. "The industrial and fine arts in grades four, five, and six in the coöperative group plan." *Educ Meth* 10:141-7 D '30. plans, bibliog
Lists articles of equipment desirable in this work.

3295. Cauch, F. R. "Industrial-arts and vocational education in a city of 300,000." *Bruce's Sch Shop Annual* 1930:50-60
The housing of industrial-arts and vocational education in Oakland, California.

3296. Christy, Elmer W. "Planning school shop equipment." *Ind Educ M* 30:361-70 Ap '29. plans, il
Tells of the advisability of coöperation in the matter of selection of shop equipment. Gives machinery specifications and shows equipment placement in the shops of Western Hills High School in Cincinnati.

3297. "Industrial-arts in a city of 500,000." *Bruce's Sch Shop Annual* 1930:60-6
The development of industrial-art shops in the city schools of Cincinnati.

3298. Comer, Edwin D. "A California school printshop." *Sierra Educ News* 26:45-8 F '30
A description of the printshop in the high school at Stockton, California.

3299. Cook, G. C. "Farm-mechanics shops." *Bruce's Sch Shop Annual* 1931:271-2
A suggestive farm-mechanics shop, which may be constructed of wood, brick, stucco, or tile.

3300. Cook, Paul. "The layout of a farm-mechanics shop." *Bruce's Sch Shop Annual* 1931:269-70
The essential features of a shop for farm-mechanics.

3301. Davenport, L. B. and Rice, Charles M. "Modern finishing devices for the metal shop." *Ind Educ M* 31:126-8 O '29. plans, il
Describes in detail the making of a number of devices to use in finishing products of the shops.

3302. Day, O. H. "Standard shop equipment lists." *Ind Educ M* 32:320-3 Ap '31
Gives shop lists of equipment as developed in the schools of Kansas City, Missouri.

3303. Donson, George C. "Industrial-arts program of the Junior-Senior High School, Washington, Pennsylvania." *Bruce's Sch Shop Annual* 1932:43-5
An outline of the industrial-arts program and plans of work shops.

3304. *Education Bulletin.* "The general shop for industrial arts instruction." *Educ Bul* 17:17-19 S '30
A description of a well-equipped workroom for general shop.

3305. Ericson, E. "On buying equipment." (ed) *Ind Educ M* 29:345-6 Ap '28
Lists and discusses nine considerations in the selection and purchase of school shop equipment.

3306. Ewing, Claude H. "The equipment of the paper-hanging shop." *Ind Arts M* 17:396-7 N '28
Describes the schoolroom properly arranged for instruction in paper-hanging. A list of equipment is given.

3307. Funk, Howard V. "Exploratory courses in the Bronxville schools." *Bruce's Sch Shop Annual* 1932:37-43
The organization and layout for industrial-arts and vocational-education activities in the Bronxville schools.

3308. Ghirardi, Alfred A. "Radio instruction in the high school." *Ind Educ M* 31: 459-60 Je '30. il
Describes the arrangement of equipment for radio instruction and tells of the outlook in this field.

3309. Graham, E. C. *School shops for vocational agriculture.* Kansas State Agri Col, vol 14, bul no. 8 (Engineering Experiment Station, bul no. 24), Manhattan, S 1 '30. 24 p.; also *Ind Educ M* 32:331-5 Ap '31. plans, il
Gives detailed description of the physical facilities needed for vocational agriculture with model layouts and equipment lists.

3310. Haynes, Merritt W. "Selection and arrangement of school printing equipment." *Ind Arts M* 17:6-8 Ja '28. plan
Shows a model layout for a school printshop and discusses equipment and its efficient arrangement. A list of necessary equipment is given.

3311. "Layout and equipment of the school printshop." *Am Sch and Univ* 1928-29:293-4. plans
Four outstanding principles of layout and equipment in relation to the school printshop are discussed.

3312. Henck, George D. "The broad scope of industrial education in the Pasadena junior high schools." *Am Sch and Univ* 1932-33:331-5. plans, il
Description of the industrial education program of Pasadena and the equipment and building facilities required.

3313. Hentzell, C. S. "Equipping the pattern shop in the part-time school." *Ind Arts M* 18:174-5 My '29
A list of equipment for the pattern shop in the part-time school.

3314. Hippaka, T. A. "The planning of industrial arts units." *Am Sch and Univ* 1931-32:419-24. plans, il
Describes a typical plan and lists 25 points to keep in mind when planning an industrial arts unit.

3315. Howard, Carl G. "Vocational agriculture." *Bruce's Sch Shop Annual* 1931: 270-1
Describes the use of separate frame buildings for farm-mechanics in the rural districts of Wyoming.

3316. Hunt, DeWitt. "The general shop plan in Stillwater, Oklahoma." *Ind Educ M* 31:178-9 N '29. plans, il
A brief description of the industrial arts building of the Stillwater High School.

3317. "Basic plans for one-story shop buildings." *Ind Educ M* 32:336-8 Ap '31. plans
Discusses plans for shop buildings of the *I, L, T, U, E, H,* and *O* types.

3318. Hurtuk, Stephen Henry. "Aeronautics in the high school." *Ind Arts M* 18: 245-9 Jl '29
The layout and equipment of the Morrison R. Waite Senior High School, Toledo, Ohio, for a course in aeronautics.

3319. "Course in auto-electricity for the senior high school." *Bruce's Sch Shop Annual* 1930:260
Course and shop layout in auto electricity for the senior high school.

3320. *Hutcherson, George E. "Shop layouts for junior and senior high schools and vocational schools." *Am Sch and Univ* 1928-29:284-92. plans
Discusses shops, their layout and equipment, under the two general heads of industrial arts and vocational education.

3321. *Industrial Arts Magazine.* "The Camden County Vocational School." *Ind Arts M* 18:188-90 My '29
Photographs and plans of the Camden County Vocational School.

3322. *Industrial Education Magazine.* "Burroughs intermediate household mechanics shop, and Cooley High School industrial mechanics shop." *Ind Educ M* 30:169 N '28
Only includes plans of shop layout for these two mechanics shops in Detroit, Michigan.

3323. "Sample forms of specifications and requisitions." *Ind Educ M* (Supplement) 31:1-2, 4, 6, 8, 10, 12, 14, 16 Ap '30
Gives sample forms for instructions and specifications, for surety bond, and for bids.

3324. Ittner, William B. "Planning the school workshop from the architect's viewpoint." *Bruce's Sch Shop Annual* 1932:46-51
The planning and equipping of the school shop.

3325. Jennings, R. F. "Automechanics laboratory in the senior high school." *Ind Educ M* 32:342-3 Ap '31. plan
States the basic objectives and suggests the arrangement of equipment which will be most effective in reaching these.

3326. Kelly, Thomas P. "Practical art-shop equipment." *Jr-Sr H Sch Clearing House* 4:208-11 D '29
Description of the equipment of the Benjamin Franklin Junior High School, Yonkers, New York, in the practical arts.

3327. Kuns, Ray F. "Automotive Trades School, Cincinnati." *Bruce's Sch Shop Annual* 1930:67-71
Photographs and plans of Cincinnati's Automotive Trades School.

3328. Martin, J. D. and Larsen, H. B. "Harding Junior High School metal shop." *Ind Educ M* 29:373-4 Ap '28. plans
Tells of the equipment and arrangement of the Harding Junior High School metal shop at Lakewood, Ohio.

3329. Moriarty, P. J. "Organizing and equipping a general metal shop in a junior high school." *Ind Educ M* 31:400-3 Ap '30. plans
Describes the equipment and its organization for a general metal shop.

3330. *Nation's Schools.* "Helping the schools to safeguard their shop equipment." *Nation's Sch* 5:46 Mr '30
A discussion of unsafe conditions found in and about school shop equipment.

3331. Newkirk, Louis V. and Stoddard, George Dinsmore. *The general shop.* Manual Arts Press, Peoria, Ill., 1929. 190 p
Many helpful suggestions for planning the room and equipment for general shop are contained in Chapter III, management devices in the general shop; Chapter IV, equipment for the general shop; and Chapter V, the arrangement of the general shop.

3332. Nordstrom, Hilmer P. "Electrical shop of the new Nokomis Junior High School." *Ind Educ M* 32:313-17 Ap '31
Describes the general layout of an electrical shop and gives a list of equipment. Equipment is discussed as are also provisions for the care of stock.

3333. O'Rourke, R. W. "Organization of a junior high school printshop." *Ind Educ M* 32:327-30 Ap '31. plans, il
Discusses the equipment necessary for worthwhile work and the arrangement which proves most effective.

3334. Parkes, G. H. "Industrial-arts and vocational education in a city of 45,000." *Bruce's Sch Shop Annual* 1930:44-9
Shop layouts for industrial-arts and vocational education in Williamsport, Pennsylvania.

3335. Peck, Stow, and Wilcox Company. *Sheet metal work, an industrial vocation for school shops.* Peck, Stow, and Wilcox Co., Southington, Conn. 15 p
Describes the equipment necessary for sheet metal work in school shops.

3336. *Proffitt, Moris M. "The general shop." *U. S. Bur Educ Bul*, no. 30, 1929. 27 p
Lists the characteristics of an efficient program in industrial arts for junior-high-school pupils and the applications of general shop to this program. Offers a suggested course and suggests projects for different levels. Discusses equipment in rural and city schools. Shop layouts are shown.

3337. "Ten points to be considered in planning shop layouts and equipment." *Am Sch and Univ* 1930-31:420-3
Discusses those principles which should be considered in equipping a shop.

3338. Roehl, L. M. "Plan of classroom and shop for agricultural work in high schools." *Am Sch and Univ* 1930-31:423-4. plans
Describes a desirable plan for an agricultural department, including rooms and equipment for related shop work.

3339. Roenigk, J. A. "Electrical test-bench for the automotive shop." *Ind Educ M* 31:378-80 Ap '30. plans, il
Describes an electrical test-bench and gives a list of materials used.

3340. Schmidt, G. A.; Ross, W. Arthur; and Sharp, M. A. "The school farm mechanics shop and its equipment." In *Teaching farm shop work and farm mechanics*, Ch. VI, p. 180-204. The Century Co., New York City, 1927. plans, il
Discusses size, doors, floors, light, floor space, heating, and equipment. Score card given.

3341. Schmidt, H. W. "Some principles underlying shop equipment and planning from a supervisor's viewpoint." *Bruce's Sch Shop Annual* 1932:52-3
A valuable guide in the planning of school shops with a list of 11 principles to be considered.

3342. Shirck, Daniel. "A laboratory shop for teaching automotive electricity." *Ind Educ M* 31:404-6 Ap '30. plans, il
Describes the equipment and arrangement of an automotive electricity shop.

3343. Slingluff, Ben F. "Preparation of specifications." *Ind Educ M* 31:392-4 Ap '30
Tells of specifications for supplies, tools, and machinery for vocational schools.

3344. Snaddon, G. H. "Organizing and teaching industrial mechanics." *Ind Arts M* 19:176-80 My '30
Course of study and layout for general shop in high school.

3345. State of Illinois. *Vocational auto mechanics; suggestive minimum equipment for 15 or 20 students per class.* State Bd of Voc Educ, Industrial Div, Springfield, 1930. mim, 10 p
Lists factors to be considered in making an equipment list. Gives a check list for equipment for schools with full-time unit trade vocational classes and for schools with general industrial vocational classes in cities under 25,000 population.

3346. Steiner, Wayne E. "Industrial-art activities in a city of 18,000." *Bruce's Sch Shop Annual* 1930:37-44
Describes the industrial-arts activities of Sunbury, Pennsylvania, which begin with the first grade and continue thru all the grades.

3347. Stone, W. A. and Knoblauch, George. "The equipment and organization of a general metal shop." *Ind Arts and Voc Educ* 18:169-72 My '29
Equipment, course of study, and layout of a general metal shop.

3348. Treat, F. M. "A laboratory shop for the coal-mining industry." *Ind Educ M* (Supplement) 31:16 Ap '30
Description of a unique shop in which coal mining is taught. A list of equipment is given.

3349. U. S. Federal Board for Vocational Education. "Equipment and supplies—their use and storage." In *The teaching of science related to the home*, p. 88-96. Federal Bd for Voc Educ, bul no. 158, Je '31
Discusses equipment required for teaching shop classes on science applications in the home and suggests methods of storage of such supplies.

3350. Vanderslice, H. R. "Organizing trade courses as a part of a comprehensive high school program." *Ind Educ M* 29:357-61 Ap '28. plans, il
Tells of the study of conditions in Aliquippa, Pennsylvania, and the subsequent organization of trade courses to meet the needs. Discusses the value of making shops approximate regular working conditions.

3351. Van Duzie, Roy R. "Industrial arts in the West Allis public schools." *Bruce's Sch Shop Annual* 1931:44-52
Illustrates the effect of industrial arts and vocational education on the building program of an industrial city.

3352. Wagar, Garton K. *A study of industrial arts shop equipment for teacher training purposes.* Master's Thesis, New York Univ, New York City, 1929. 64 p

3353. Warner, William E. "Establishing the general shop." *Ind Arts and Voc Educ* 19:287-90; 344-6 Ag, S '30. plans, il
Discusses the purpose of the general shop and the necessity for proper layout and equipment.

3354. *"Principles and examples of school-shop planning." *Am Sch and Univ* 1930-31:425-30. plans, bibliog

Discusses the proper arrangements for the most effective work in the school shops.

3355. "The laboratory of industries plan." *Bruce's Sch Shop Annual* 1931:261-4

Conceptions, mechanical features, and professional features of the general shop.

3356. Wise, Harold R. "Standard practices in equipping the school shop." *Ind Educ M* 30:375-88 Ap '29. plans, il

Describes shops in some of the schools of Boston and tells of their quota lists of supplies. Gives standard equipment lists for some of them.

3357. "Adapting a standard shop layout for printing to varying conditions." *Ind Educ M* 31:395-9 Ap '30. plans

Tells how to adapt a standard layout to the individual needs. Lists standard equipment.

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HOUSEHOLD ACTIVITIES ROOMS

3358. Brodshaug, Melvin. *Buildings and equipment for home economics in secondary schools.* Columbia Univ, Teach Col, Contr to Educ no. 502, New York City, 1932. 178 p

A detailed report of a study of the literature and present practices in the housing and equipping of home economics departments in secondary schools of cities ranging in population from 10,000 to 500,000.

3359. "Space allotments and equipment for home economics activities in high schools." *Am Sch and Univ* 1932-33:291-4. plans, il

Sets up guiding principles of planning and discusses the various laboratories and apartments essential.

3360. Dilts, Madge E. "Carbide gas for rural schools." *Prac Home Econ* 7:239-40 Ag '29. il

Discusses carbide gas as a substitute for gas for heating and lighting home economics equipment in non-gas regions.

3361. *Heywood, Stella May and Rust, Lucile Osborn. *Planning and equipping home economics rooms in Kansas high schools.* Kansas State Agri Col, vol 14, bul no. 10 (Div of Home Econ, bul no. 4), Manhattan, O 15 '30. il, 63 p

Offers a list of characteristics of satisfactory home economics laboratories and classrooms. Discusses the size of room, lighting, ventilation, and floors, and lists a number of faults commonly found in home economics rooms. Lists the equipment necessary and discusses its placement.

3362. *Kauffman, Treva E. "Home economics equipment in relation to teaching." In *Teaching problems in home economics*, Ch. X, p. 149-72. J. B. Lippincott and Co., Philadelphia, 1930. plans, il

Plans of apartments and cottages for home-making classes, and discussion of equipment required.

3363. Knight, Ila T. "Equipment and use of the home economics department of a modern school." *Am Sch and Univ* 1929-30:328-34. plans, il

A description of the home economics laboratory of the Nichols Intermediate School, Evanston, Illinois.

3364. Kramer, Martha M. *Rearranging a food laboratory.* Kansas State Agri Col, Manhattan. il, 4 p

Compares the unit plan of laboratory arrangement with the old "hollow square" plan.

3365. Miller, Cora B. "A one-room home-economics equipment." *Home Econ News* 1:4-5 Ja '30. plans, il

Layout and description of unit suited to the needs of a small high school.

3366. O'Leary, Iris Prouty, chairman. *Report of committee on home economics equipment.* Federal Bd for Voc Educ, Pamphlet Miscellaneous 947, 1928. 35 p

Report of a committee of the North Atlantic Regional Conference dealing with equipment for vocational classes in home economics. Sets up a policy for determining equipment and discusses the unit kitchen. Equipment for other phases of the work is discussed, as is also lighting of home economics rooms.

3367. *Practical Home Economics.* "Ideal home economics cottage dedicated at LaGrange, Georgia." *Prac Home Econ* 8:153-4 My '30

Description of a cottage which has the kitchen divided into five units to make conditions as nearly as possible like home conditions.

3368. "Typical home economics equipment in the public schools of New York City." *Prac Home Econ* 8:295 O '30

Illustrations only.

3369. Procter and Gamble Company. *Helpful cooking equipment.* Procter and Gamble Co., Nat Household Service, Manual no. 19, New York City, 1929. il, 11 p

Suggests equipment that is useful in the cooking laboratory.

3370. Shank, Dorothy E. *Modern food laboratories.* American Stove Co., bul no. 39, 1931. plans, il, 12 p

Discusses trends in the arrangement of food laboratories in schools and presents some modern equipment. Shows the importance of proper spacing and routing in the equipment arrangement.

3371. State of Alabama. *Rooms, furniture and equipment for home economics, 1930.* State Bd of Educ, Div of Voc Educ, Montgomery, 1930. 40 p

Valuable reference for schools planning new home economics departments or desiring to improve those already in existence. The following items are treated in detail: rooms and their interior construction and finish, storage, arrangement of laboratories, attractiveness, furniture and its selection, equipment and its selection.

3372. State of New Jersey. *Equipment for home economics*, p. 1-36. State Dept of Pub Instr, Voc series no. 22, Trenton, 1929

The standards and procedures developed by the New Jersey State Department of Public Instruction for the guidance of districts in the selection and arrangement of home economics.

3373. Thompson, Floris Culver. "The elementary school lunch." *The Home Econ* 6:245 S '28

Contains a list of equipment needed for serving a simple hot lunch to 100 children of an elementary school.

3374. *U. S. Federal Board for Vocational Education. *Plant and equipment for vocational classes in home economics.* Federal Bd for Voc Educ, bul no. 124, p. 5-97 (Home Econ series no. 10), D '27. plans, il

The following items are discussed: Part II, the plant layout; Part III, standards for home economics plant and equipment; Part IV, equipment for the individual laboratories. Recommendations for each are given and well illustrated.

3375. Van Liew, Marion S. "Home making courses in rural high schools." *Prac Home Econ* 7:330-1 N '29. plans, il

Cost of equipment itemized for two New York rural high schools.

3376. Welbourne, Frances. "The home economics house." *Home Econ News* 1:18-19, 21 F '30. plans, il

Points out the advantages of a separate house over a suite of rooms for home economics in the ordinary school building.

3377. *Whitcomb, Emeline S. "Plans and equipment for home economics departments." *Am Sch and Univ* 1930-31:385-400. plans, il

Discusses such phases as lighting, size, and special features, and describes rooms in schools of a number of cities. Equipment for different phases of home economics work is listed.

3378. *Winchell, Cora Marguerite. "Rooms and equipment." In *Home economics for public school administrators*, Ch. VI, p. 101-20. Columbia Univ, Teach Col, Bur of Publ, New York City, 1931

A very complete discussion of the building requirements for home economics in public schools.

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COMMERCIAL ROOMS

3379. Agnew, Peter L. "An investigation of office appliances for instructional purposes in school." *J Com Educ* 57:275-6 N '28

Report of a study of equipment used in commercial rooms and of that which should be used. Fifty schools in the vicinity of New York City were used for the study.

3380. "Machines, equipment, and supplies." *J Bus Educ* 7:8-9 Ja '32. il

Gives suggestions for the choice of the most desirable equipment for offices and commercial departments.

3381. *Barnhart, Earl W. "Facilities for teaching commercial subjects in high schools." *Am Sch and Univ* 1931-32:372-80. il

Discusses equipment and buildings which are helpful in properly presenting commercial subjects.

3382. Dake, L. Gilbert. "The commercial rooms and their equipment." *Jr-Sr H Sch Clearing House* 4:223-6 D '29

Discusses building and equipping commercial departments.

3383. Edgeworth, Clyde B. "Design and equipment of rooms for commercial education in high schools." *Am Sch and Univ* 1930-31:374-6. plans, il
Tells of the planning and equipment of commercial departments in Baltimore. The 40-pupil unit is the basis.

3384. *Green, Rhue E. "The plan of the high-school commercial unit." *Am Sch Bd J* 82:56, 137 Ja '31
Report of a study based on reports from 125 of the largest high schools in 20 North Central states. Discusses the typical commercial unit which is made up of a bookkeeping room, a typewriting room, a stenography room, and a commercial recitation room.

3385. Hanson, Arthur W. "The purpose of and the need for the laboratory in bookkeeping." *Balance Sheet* 10:11-14 S '28
A discussion of the business laboratory in connection with schools and the equipment that will produce the best results.

3386. Haynes, Benjamin R. and Loso, Foster W. "Planning the commercial suite." *J Bus Educ* 5:31-2 Ag '29. plans
Discusses the problems of the physical layout of classrooms for the department. Room needs as related to number of pupils and to curriculum are also discussed.

3387. *Journal of Business Education.* "Business machines." *J Bus Educ* 4:31 Ag '30; 5:37 O '30. il
A discussion of the use of machines in connection with commercial education.

3388. Lomax, Paul S. and Agnew, Peter L. "Equipment for bookkeeping and accounting classrooms." *Am Sch and Univ* 1930-31:377-9. il
Describes what the authors think is proper equipment for bookkeeping and accounting classrooms.

3389. Lomax, Paul S. and Walsh, John V. "Equipment for secretarial practice classrooms." *Am Sch and Univ* 1931-32:381-3. il
Discusses such equipment as desks, chairs, cabinets, mechanical devices, etc.

3390. Morse, Perley. *Business machines.* Longmans, Green and Co., New York City, 1932. 313 p
Deals with the changing requirements of business and suggests equipment for keeping pace with these changes.

3391. Nichols, Frederick G. "Equipment needed for a high school commercial department." *Am Sch and Univ* 1932-33:227-33. diag, il
Lists, describes, and gives the cost of specialized and unspecialized equipment for the commercial department and gives a number of suggestions in planning the high school commercial unit.

3392. *Office Appliances.* "New machines and devices." *Office Appliances* 52:32-5, 185-6 O '30. il
Describes a number of items of equipment for offices and commercial rooms.

3393. Weersing, Frederick J. *A study of certain aspects of commercial education in the public high schools of Minnesota,* p. 24-5. Univ of Minnesota, Minneapolis, 1927
A brief discussion of rooms and equipment.

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THE CAFETERIA

3394. *American School and University.* "The improvement of cafeteria service." *Am . Sch and Univ* 1930-31:402-3
Discusses refrigeration, cleaning and sanitation, and gives rules for each.

3395. *American School Board Journal.* "Equipment for school lunchrooms." *Am Sch Bd J* 78:127 F '29
Report of a study of the school lunchroom equipment problem, made by Zoe Wolcott of Pittsburg, Kansas. Typical statements are taken from her report.

3396. Barnhill, O. H. "Whittier's successful school cafeteria." *Am Sch Bd J* 81:110, 128 O '30
Description of the administration of the John Muir Elementary School cafeteria at Whittier, California.

3397. Blakeslee, K. R., "Planning the new cafeteria." *Sch Feeding Management* 16:8-9, 17 Jl '29. plans
Shows expenditures necessary to set up and equip a school cafeteria for a school with an enrollment of 400 to 1,000. Shows the kitchen and dining room arrangement and lists prices of different articles of equipment.

3398. Bliss, Vincent R. "How to buy kitchen and cafeteria equipment." *Nation's Sch* 6:75-8, 80, 82 D '30. il
This study reports an attempt to establish some definite means of safeguarding school funds in the purchase of correct equipment. Furnishes data on determining the grade of equipment to be purchased and the cost and durability of cafeteria equipment; the rating being made on the factors of cost, length of service, maintenance, sanitary properties, and appearance.

3399. Briggs, Howard L. and Hart, Constance C. "Choosing and placing the school's cafeteria equipment." *Nation's Sch* 8:61-8 F '32
States that every detail of planning and equipping the lunchroom and the kitchen should be carefully studied from all angles.

3400. Brown, E. M. "School cafeterias, their equipment and organization." *Nat Assn Pub Sch Bus Officials* (Proc 17th annual meeting) 1928:117-21
Tells of the St. Louis cafeterias from the points of view of organization and methods of equipment.

3401. Craddock, Mozelle E. *The school lunch.* Texas State Col for Women, Col of Industrial Arts, Col bul no. 156, Denton, Jl 1 '31. 60 p
Gives detailed list of equipment essential to the proper serving of school lunches.

3402. *Ford, Willard S. "Layout and equipment of high school cafeterias." *Am Sch and Univ* 1928-29:277-81. plans
Discusses a number of factors to be considered in cafeteria planning. Equipment needed is discussed and lists given.

3403. "Arrangement and equipment of school cafeteria kitchens." *Am Sch and Univ* 1932-33:288-91. plans, il
Describes the essential units and special features of the well planned school kitchen and cafeteria illustrating desirable layouts.

3404. Green, Rhue E. "The high-school cafeteria." *Am Sch Bd J* 84:68; 98, 100 Ja, F '32
A report of a study of 139 of the largest high schools in the 20 North Central states to determine the present status of the high-school cafeteria, including rooms, arrangement of rooms, equipment provided, and policies of administration.

3405. Grover, C. C. *Scale for rating junior and senior high school cafeterias.* Pub Sch, Bur of Curriculum Development, Res and Guidance, Oakland, Calif., Ap '29. 12 p. ms

Includes a point rating scale on administration and a sanitation scale, suggests minimum menus, and recommends standard portions and prices for various foods.

3406. Hamilton, John Leonard. "Designing the social unit of a modern high school." *Am Sch and Univ* 1932-33:302-6. plans, il

Describes the cafeteria and kitchen arrangements in the New Trier Township High School at Winnetka, Illinois, and in the Evanston Township High School at Evanston, Illinois.

3407. Hart, Chester. "Kitchen equipment that is simple and serviceable." *Nation's Sch* 8:100, 102 Ag '31. il

Description of Vulcan ranges for school kitchens.

3408. Hart, Constance C. "Guiding food selection in well equipped cafeterias." *Nation's Sch* 1:21-5 Ja '28. plans, il

Discusses the school cafeteria as an educational organization. Plans for guiding food selection are presented. Cleveland's system of cafeteria management is given.

3409. Hoover, Lucretia Maye and West, Bessie Brooks. *The organization, administration and equipping of a school lunch room.* Kansas State Agri Col, vol 14, bul no. 9 (Div of Home Econ bul no. 3), Manhattan, 1930. plans

Reports a study of the Manhattan High School lunch room, showing floor plans, and gives a suggested plan for a school lunch room for 200 students.

3410. John Van Range Company. *Practical planning for school food service.* John Van Range Co., Cincinnati, O., 1929. plans, il, 31 p

Discusses the adaptation of the cafeteria to the school organization with regard to its location and equipment. Makes suggestions as to space requirements, kitchen arrangement, sanitation, water, and ventilation. Well illustrated with pictures from numerous high schools and colleges.

3411. Kauffman, Treva E. "The school lunchroom and cafeteria; its maintenance, management, and educational value." *Am Sch Bd J* 83:55 D '31

Takes up location and equipment of the lunchroom and relation of the lunchroom to the home-making department.

3412. Lehrbach, Henry G. "Management and equipment of school cafeterias." *Am Sch and Univ* 1931-32:390-4. plans, il

Discusses the equipment and surroundings of school cafeterias and shows desirable arrangements.

3413. Price, Roy Seldon. "A modern cafeteria and kitchen layout." *Am Sch and Univ* 1931-32:395. il

Description of the cafeteria in the Horace Mann School, at Beverly Hills, California.

3414. Rosenberger, Hetty E. "Food preservation and its relation to school health." *Am Sch Bd J* 80:51, 122 Je '30. il

Sets out the essentials of adequate refrigeration for the school cafeteria and cooking classes. Illustrates by showing systems in use.

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66	1712	2454	4158
68	1737	2465	

THE GYMNASIUM AND ITS ACCESSORIES

3415. Allen, Frank E. "Vocational and physical education building at Muncie, Indiana." *Athletic J* 9:7-8 Ap '29. plans, il

A description of a $250,000 high-school plant combining physical and vocational education provisions.

3416. *American City.* "Lighting equipment for athletics." *Am City* 45:145 O '31. il

Describes an illuminated basketball score board.

3417. *American Educational Digest.* "The Ames public school fieldhouse." *Am Educ Digest* 48:20-1 S '28. plans

A brief description of the athletic plant of the Ames, Iowa, school system.

3418. "The Somerville gymnasium." *Am Educ Digest* 48:115-17 N '28. plans, il

Description of the school plant of Somerville, Massachusetts, with particular emphasis upon the gymnasium unit.

3419. *American School Board Journal.* "Economy and efficiency in the boys' showers." *Am Sch Bd J* 82:82 F '31. plan

Description of the shower rooms in the Raub and Morton schools, Allentown, Pennsylvania.

3420. Ayers, Gerald Hamilton. *The evaluation of gymnasium equipment in terms of usage and cost.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. tables, 55 p.; abstract in *Annotated index of theses and dissertations in education*, p. 15. Univ of Southern California, Sch of Educ, Los Angeles, 1930

Report of the cost and the amount of usage of 72 pieces of gymnasium equipment. This equipment was found in 45 different schools.

3421. Burkhardt, Carl H. "The accommodations and the financial operation of the Buffalo All-High School Stadium." *Am Sch and Univ* 1931-32:245-7. il

A description of a high-school stadium and the story of its financial operation.

3422. Childs, W. L. "The physical education plant and program in a high school of 2,000 students." *Athletic J* 11:14-17, 54-5 Ap '31

Describes in detail the physical education plant of the New Trier High School, Winnetka, Illinois. Describes gymnasium rooms of varying sizes. Discusses building arrangement in relation to the best service to be secured.

3423. Coleman, Caroline Whitehouse. *Physical education for girls in secondary schools.* Master's Thesis, Univ of Chicago, 1928. 119 p.; abstract in *Bul of Dept Sec-Sch Prin of the N. E. A.*, no. 24, p. 99-101, Ja '29

A study of the facilities for physical education and the physical education program, and of the program of health supervision and health education for girls in 35 representative junior and senior high schools. Sixteen of these schools are located in or near Chicago.

3424. *Davison, Robert L. "Gymnasium planning." *Arch Rec* 69:63-90 Ja '31. plans, il

A detailed discussion of construction problems in connection with gymnasiums. Lighting, floors, seating, general layout, roof, and equipment are brought into the discussion. A number of outstanding gymnasiums are used to illustrate.

3425. *Domestic Engineering.* "Waterproofing showers." *Domestic Eng* 135:48-9 My 2 '31. plans, il

Describes a method for waterproofing the floors of shower stalls.

3426. Elliott, Ruth. "Modern trends in physical education." *Res Q Am Phys Educ Assn* 1:74-85 My '30

Trends relative to equipment are discussed among other things.

3427. Everts, E. W. "Equipment for physical education." *Minn J Educ* 10:179-80 Ja '30. tables

Suggests amount to be spent for equipment. Estimates are based upon what is now being spent by some schools. Equipment for elementary and for high schools is listed in tables, with approximate costs.

3428. Heffernan, Mary M. *Physical education for small secondary schools.* State of Pennsylvania, Dept of Pub Instr, bul no. 49, Harrisburg, 1929. 59 p

Suggests among other things the equipment needed for proper physical education work in schools.

3429. Hicks, D. D. "An indoor rifle range." *Am City* 44:144 My '31

Description of rifle range in high-school gymnasium at Parkersburg, West Virginia.

3430. Holmes, Glen. "Physical education and athletics for boys in a large high school." *Athletic J* 11:14-16 Je '31. il

Description of the plant and equipment of the Oak Park and River Forest Township High School. This school has an enrollment of 3,800, of which 1,950 are boys.

3431. *Jallade, Louis. "Gymnasiums, lockers, and swimming pools." *Am Sch and Univ* 1928-29:178-86. il

Discusses the development of gymnasium planning and the ideals which should be used in this. Materials, locker rooms, janitor service, showers, pools, and other items enter into the discussion.

3432. Jones, H. A. "The status of equipment in athletic, health, and physical education departments of one hundred high schools in the United States." *Sch R* 38:55-60 Ja '30

Study based on data secured by means of an extensive questionnaire from high schools in 27 states. Considerable improvement must be made before the equipment of the high schools studied measures up to the standard set by authorities in this field.

3433. Kulcinski, Louis. *Physical and health education.* State of Illinois, Dept of Pub Instr, Circular no. 247, Springfield, 1930. plans, il, 61 p

Among other things, lists economized equipment and gives suggestions for its use and in some cases for its production.

3434. Llewellyn, J. C. "Facilities for school athletics; new trends and developments." *Arch Forum* 55:759-64 D '31. plans, il

Discusses the combination auditorium and gymnasium. Stresses the need for play facilities. Describes a number of small field houses and sets out gymnasium requirements and the need for accessory rooms.

3435. Lowman, C. L.; Colestock, Claire; and Cooper, Hazel. *Corrective physical education for groups.* A. S. Barnes and Co., New York City, 1928. 521 p.; reviewed by F. R. Rogers in *J Educ Res* 18:250 O '28

Notes on equipment are given in connection with instructions as to the organization of the course.

3436. MacNaughton, James H. "A new school athletic and students' activity building." *Am Sch and Univ* 1931-32:237-8. plans, il

A description of the new building at Williston Academy, Easthampton, Massachusetts.

3437. *Modern Public Buildings.* "Enlow Field Stadium, Evansville, Indiana." *Modern Pub Bldgs* 2:28 Ja '28. plans, il

Description of the Benjamin Bosse high-school stadium, erected at a cost of $81,050, with a seating capacity of 4,400.

3438. Narragansett Machine Company. *Gymnasium construction.* Narragansett Machine Co., Providence, R. I., 1928. 78 p

Outlines a number of essential building features and shows the principles of construction which harmonize with equipment requirements in gymnasiums.

3439. *Nash, Jay B. "Physical education plant." In *The administration of physical education,* Ch. VIII, p. 202-71. A. S. Barnes & Co., New York City, 1931. plans, il

Discusses in detail the following topics: the need of careful planning, what shall we tell the architect, elements in a physical education plant, high school physical education plant, elementary physical education plant, the platoon school, rural consolidated schools, one- or two-room rural schools, and supplies for the physical education plant. A list of ten principles is given. A carefully selected bibliography is presented at the end of the chapter. Every phase of the planning is well illustrated.

3440. "Essential physical education facilities in public schools." *Am Sch and Univ* 1932-33:171-3. plans, il

Divides physical education facilities into three groups: the instructional unit, the service unit, and the administrative unit. Gives the amount of space to be devoted to each and sets up standards for both indoor and outdoor facilities.

3441. *Nation's Schools.* "How sliding and folding doors provide additional space." *Nation's Sch* 8:40 Jl '31

Uses of sliding doors to make one room do the work of two.

3442. Pangburn, Weaver. "Winter sports." *Jr-Sr H Sch Clearing House* 6:145-9 N '31

Discusses activities suitable for winter physical education work and the equipment for such.

3443. Peery, Elmer Joseph. *A study of the construction, equipment, and utilization of boys' gymnasium locker and shower rooms in southern California high schools.* Master's Thesis, Univ of Southern California, Los Angeles, 1931. tables, il, bibliog, 133 p.; abstract in *Annotated index of theses and dissertations in education,* p. 17. Univ of Southern California, Sch of Educ, Los Angeles, 1931

A study based on information gathered on a check list, interviews, and copies of floor plans.

3444. Peppe, Michael. "The shower bath." *J Health and Phys Educ* 1:56-8 My '30

Short sketch giving an historical account of the shower bath and certain additional comments on temperature and installation.

3445. *Permaflector Lighting.* "Indoor athletics and recreation." *Permaflector Lighting* 4:19-27 Mr '31. plans, il

Discusses the arrangement of lighting apparatus in indoor athletics units to secure proper lighting results for different games. Gives plans for lighting swimming pools, gymnasiums, and playing floors.

3446. Ready, Marie M. "Equipment for physical education in city public schools." *Am Sch and Univ* 1931-32:239-44. il

A discussion of gymnasiums, playrooms, swimming pools, playgrounds, and athletic fields for city schools.

3447. Rogers, James Edward. "Progress in physical education." *Mind and Body* 34: 398-404 F '28

Report of a study showing the trends in providing outdoor and indoor facilities for physical education, including size of sites and gymnasiums, auditoriums, basements, and playgrounds.

3448. Rogers, James Frederick. *State-wide trends in school hygiene and physical education,* p. 2-3. U. S. Office of Educ, pamphlet no. 5, My '30

Discusses ventilation laws of the states.

3449. Sharman, Jackson Roger. *Physical education facilities for the public accredited high schools of Alabama.* Columbia Univ, Teach Col, Contr to Educ no. 408, New York City, 1930. 78 p.; reviewed by E. E. Bratcher in "Physical-educational facilities in the high schools of Alabama" in *Sch R* 39:156-7 F '31

Sets out facilities necessary for the physical education program of Alabama, which is the result of a study of conditions in Alabama schools.

3450. Smith, Arthur. *A study of gymnasiums.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, 1930

3451. Stockton, K. L. "A modern gym at Huntington Park." *Sierra Educ News* 24:23 Ap '28

A description of the gymnasium in a California high school. Its several departments are described briefly.

3452. *Williams, Jesse F. "Objectives in equipment and staff." In *The principles of physical education,* Ch. IX, p. 333-68. W. B. Saunders and Co., Philadelphia, 1927

Points discussed are: changed conditions modifying equipment, area of school site, considerations determining standards, gymnasium, playroom, swimming pool, examination and auxiliary rooms, dressing facilities, showers, lockers, and outdoor facilities.

3453. Winters, Arthur R. *Study of the trend in gymnasium construction.* Master's Thesis, New York Univ, New York City, 1930

3454. Zwarg, L. F. "Study of the history, uses and values of apparatus in physical education." *Mind and Body* 38:429-38; 481-90; 556-65; 594-601; 637-50 Ap, My, Je, S, N '31

Classifies apparatus for physical education and discusses objections to and values attributed to the use of apparatus.

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THE SWIMMING POOL

3455. *American City.* "New diving tower accommodates seven divers at a time." *Am City* 45:151 Jl '31. il

Describes an American combined diving tower and springboard.

3456. "Under-water lighting for swimming pools." *Am City* 45:151 S '31

Describes the apparatus for lighting the water in swimming pools.

3457. American Public Health Association. *Swimming pools and other public bathing places.* Am Pub Health Assn, New York City, 1930

A report of the Sanitary Engineering Section which presents design, construction, and equipment of pools. Standards for bathing beaches and wading pools are set.

3458. *American School and University.* "The old and the new in swimming pool design." *Am Sch and Univ* 1929-30:228. il

Pictures an old and a new swimming pool in the Detroit schools. Lighting is especially noticeable.

3459. "Desirable features in new swimming pools." *Am Sch and Univ* 1931-32: 234-6. plans, il

Discusses briefly a few construction and lighting features.

3460. *American School Board Journal.* "Amendment to the New York State Sanitary Code." *Am Sch Bd J* 77:106 N '28

Gives amendment to the New York State Sanitary Code.

3461. *Architectural Record.* "Underwater lighting for swimming pools." *Arch Rec* 68:470-2 D '30. plans, il

Tells how pools may be effectively lighted below the surface of the water.

3462. *Bathhouse and Beach Management.* "Specifications for concrete swimming pools." *Bathhouse and Beach Management* N '30. p. 5-6

3463. Beggs, E. W. "The underwater lighting of swimming pools." *Am Arch* 136: 60-1, 84, 88, 92 O '29. il

Gives the design of fixtures and their proper arrangement for lighting the pool.

3464. *Broadhurst, Jean.* "Simplified control of swimming pools." *Teach Col Rec* 32:730-41 My '31

Discusses problems which present themselves in the operation of the swimming pool and suggests solutions for these.

3465. Byck, S. M. "Something new in pool illumination." *Beach and Pool* 3:6, 18-19 Je '29

3466. Crane, A. M. "Pool designs and construction data." *J Am Assn Hygiene and Baths* 14:53-64 '30

3467. Gage, S. DeM. "Swimming pools and other bathing places." *J Am Assn Hygiene and Baths* 14:27-48 '30

3468. Hartman, Frank E. "The purification of water with special reference to swimming pools." *Am Sch Bd J* 76:55-6, 141-2; 53-4, 138 My, Je '28; 77:65, 134 Jl '28

Discussion of need for sanitation in pools and of methods of purification. The operation of a satisfactory outfit is shown.

3469. Hicks, D. D. "A high school pool that serves the general public as well as the students." *Am City* 41:110 O '29. il

Description of the dual purpose swimming pool at Lakewood, Ohio.

3470. *Indiana State Board of Health Monthly Bulletin.* "Regulations governing the design, construction and operation of swimming pools, and establishing standards for the bacteriological quality of the water therein." *Indiana State Bd of Health Monthly Bul* 33:209-11 Ja '30

Revision of the Indiana State Board of Health Rule no. 71 regarding swimming pools.

3471. •Kocher, A. Lawrence and Davison, Robert L. "Swimming pools." *Arch Rec* 65:68-87 Ja '29. plans, il

Points out some special pool problems and attempts to show what is desirable practice instead of common practice in pool construction. Deals with size, linings, gutters, runways, colors, lighting, acoustics, recirculation, and similar problems. Gives approximate costs and a specifications checking list.

3472. Mackey, H. D. "A modern substitute for the old swimming hole." *Nation's Sch* 6:49-52 Ag '30. il

Discussion of the educational worth of the swimming pool and descriptions of a few pools in modern high-school buildings.

3473. *Playground and Recreation.* "Outdoor swimming pools." *Playground and Recreation* 23:273-96 Ag '29. il

Discusses types and operation of swimming pools and gives a table which sets out the features of pools in a number of cities of the United States.

3474. *Plumbers and Heating Contractors Trade Journal.* "Swimming pool standards." *Plumbers and Heat Contr Trade J* 89:22-8 S 15 '30. il

Gives the code of the American Public Health Association for design, construction, equipment, and operation of swimming pools. Lighting, heating, ventilation, and water conditioning and recirculation are among the problems considered.

3475. "Swimming pool water conditioning by pressure filters and sterilizers." *Plumbers and Heat Contr Trade J* 90:13, 79-80 Ap 15 '31. plans

Tells the details of swimming pool plumbing and water treatment apparatus installation.

3476. Scherer, Francis R. "Subsurface illumination of school swimming pools." *Nat Council on Schoolhouse Construction* (Report of 7th annual convention) 1929:142-6. mim

Description of experimentation with different devices and the development of the Rochester unit.

3477. Smith, M. E. "Sanitary control of swimming pools." *New England Assn of Chem Teach* (Report) 31:43-50 N '29; reviewed in *J Chem Educ* 7:700-1 Mr '30

States that the problem of the sanitary control of a swimming pool involves the consideration of three essential elements: (1) design, (2) supervision, and (3) maintenance. Location of the swimming pool in the basement is undesirable. Discussion of means of purification of water.

3478. Spain, Charles L. "Making effective use of the swimming pool." *Am Sch Bd J* 81:40 Ag '30. il

Explains a type of gate and partition to divide a large pool for class use in the Detroit schools.

3479. State of California. *Swimming pools. Rules, legislation, and notes on construction and operation.* State Dept of Pub Health, Special bul no. 38, rev. Sacramento, Jl '29. 14 p

Gives the law of California on swimming pools and makes suggestions for their building and operation.

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THE PLAYROOM

3480. Rockwell, E. and others. "The recreation room for grades four, five, and six in the coöperative group plan." *Educ Meth* 10:339-46 Mr '31. plans, il
Lists the equipment that is desirable for the work in recreation.

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ADMINISTRATIVE ROOMS AND BUILDINGS

3481. *American School Board Journal* "The school-administration building of the Berkeley, California, Board of Education." *Am Sch Bd J* 77:45-6 S '28. plans, il
The evolution of administrative quarters and a description of the building in Berkeley.

3482. "The new administration building for the Pittsburgh Board of Education." *Am Sch Bd J* 77:49-50 D '28. plans, il
Brief description of the school-administration building in Pittsburgh.

3483. "Atlantic City houses its school board offices." *Am Sch Bd J* 78:62-3 F '29. plans, il
A description of the new school administration building at Atlantic City erected at a total cost of $341,410. A list of the uses made of the several parts is given.

3484. "Philadelphia to erect administration building." *Am Sch Bd J* 78:37 Mr '29. il
A description of the school administration building proposed for Philadelphia.

3485. "The trend toward school-administration buildings." (ed) *Am Sch Bd J* 78:64 Mr '29
A discussion of the tendency toward better housing of the administration units of city school systems.

3486. "The new school-administration building at Newark, New Jersey." *Am Sch Bd J* 78:59 Ap '29. il
A description of the new school-administration building at Newark, New Jersey.

3487. "The location of school-administration headquarters." (ed) *Am Sch Bd J* 79:71 Jl '29
A presentation of some considerations in the selection of a site for the Detroit headquarters.

3488. "Oakland's new administration building." *Am Sch Bd J* 79:57-8 Ag '29. plans, il
Description of a $240,000 building which is part of a public service group. The cost per cu. ft. was 30.8¢.

3489. "Cleveland's projected school headquarters." *Am Sch Bd J* 79:55 D '29. plans, il
A description of Cleveland's proposed administration building. Its connection with the civic center group is discussed.

3490. "The Jamestown school-administration building, Jamestown, New York." *Am Sch Bd J* 80:45-6, 144 F '30. plans, il
Detailed description of a 120′ x 150′, two-story, $80,000, school-administration building.

3491. "Begin Cleveland Board of Education building construction." *Am Sch Bd J* 81:42 Ag '30. il
A description of Cleveland's new administration building.

3492. "Davenport's school-administration building." *Am Sch Bd J* 81:55-6 Ag '30. plans, il
A description of Davenport's building and some arguments for such buildings.

3493. "The new education building for Pennsylvania." *Am Sch Bd J* 84:70 Ja '32. il
Description of a new $5,500,000 state education building for Pennsylvania.

3494. "A school-administration building." *Am Sch Bd J* 84:52, 95 F '32. il
Brief description of a school administration building presented to the school board by the city officials of Vancouver, Washington.

3495. "Moline occupies new administrative offices." *Am Sch Bd J* 84:76 Mr '32. il
Short description of a former residence adapted to the needs of the board of education of Moline, Illinois.

3496. Amos, Thyrsa W. "Office economy." In *Deans at work*, by Sarah M. Sturtevant and Harriet Hayes, eds., Ch. I, p. 1-65. Harper and Bros, New York City, 1930. plans, il
Presents in some detail the layout for the office of the dean of women. Among other things ventilation, light, and heat are discussed.

3497. Bonar, James. "The administration building for the Board of Public Education, Pittsburgh, Pennsylvania." *Am Sch and Univ* 1929-30:65-7. plans, il
A brief description and story of the construction of the Pittsburgh school administration building.

3498. Brown, Marion A. "Organization of the dean's work in the secondary school." In *Deans at work*, by Sarah M. Sturtevant and Harriet Hayes, eds., Ch. III, p. 140-6. Harper and Bros, New York City, 1930
Discusses, among other things, the equipment needs of the office of dean of girls.

3499. *Bulletin of the Department of Elementary School Principals of the National Education Association.* "The elementary school principal's office." *Bul of Dept of El Sch Prin of the N.E.A.* (7th yearbook) 7:267-84 Ap '28
Report of the committee on standards and training for the elementary school principalship. Presents the following: (1) data on offices as reported by supervising principals; (2) plans and discussion of typical offices; (3) plans and discussion of standard offices; (4) a statement of certain minimum essentials for the elementary school office.

3500. Buros, Francis C. "Furniture and filing apparatus for principals' rooms." *Am Sch and Univ* 1931-32:306-8. plans, il
Describes layout for principal's office and discusses equipment.

3501. Burr, Samuel Engle. "Providing a home for the Lynn school officials." *Am Sch Bd J* 76:42-3, 135 Ap '28. plans, il
Story of the construction and a description of the Lynn administration building.

3502. Campbell, Fallen. "Filing equipment and indexing for county superintendents' offices." *Am Sch Bd J* 78:96, 98, 100, 102 Ap '29
Lists filing supplies and equipment suitable for county superintendents' offices.

3503. Campbell, Sadie B. and Sturtevant, Sarah M. "Office requirements of a high school dean of girls." *Am Sch and Univ* 1931-32:91-2. plans
Shows a plan for the layout of rooms for a dean of girls and suggests certain considerations.

3504. Esterly, Virginia Judy. "The dean's desk." *Nat Assn of Deans of Women* (14th yearbook) 1927:77-90
Discusses the layout of the dean's office and equipment designed to secure effective work.

3505. Green, Rhue E. "The office suite of the high school principal." *Am Sch Bd J* 80:70-1, 153-4 Ja '30. plans, il
Reports a study of office equipment, furniture, and rooms of 185 high schools included in the territory of the North Central Association, in an attempt to determine the most desirable set-up for the administrative office.

3506. Hubbard, Frank W. "The elementary school office." *Am Sch Bd J* 79:57-8 O '29. plans
A study of the needs of the principal and plans for meeting these with well-arranged offices. Location, size, and equipment are considered.

3507. Johnson, Mary Hooker. "Equipment for the work." In *The dean in the high school*, p. 42-4. Professional and Technical Press, New York City, 1929
Description of the dean's suite at Englewood High School in Chicago, and at the Washington Irving High School in New York. Points out that school buildings need a social room and an office for the dean.

3508. *Journal of Education.* "Outstanding educational buildings planned by the Frank Irving Cooper Corporation." *J Educ* 111:194-5 F 17 '30. il
Pictures of a number of new buildings, including the N.E.A. administration building. Some comments on these are given.

3509. *Journal of the National Education Association.* "Housing the administration of education." *Nat Educ Assn J* 18:168 My '29. il
Shows pictures of administration buildings in six cities of the United States. No descriptions.

3510. Kemmerer, Walter W. "Machine equipment in a school superintendent's office." *Am Sch and Univ* 1931-32:290-4. il
Discusses different pieces of equipment for the superintendent's office and presents the uses of each.

3511. Lehrbach, Henry G. "The central warehouse of the Pasadena city school system." *Am Sch Bd J* 79:67-8, 147 Jl '29. plans, il
Discussion of the need for and construction of this warehouse. Outline of the administration of the service rendered by the department.

3512. Mitchell, Charles L. "Beautify your office as you do your home." *Office Appliances* 51:214-15 Je '30. il
Discusses the problem of furnishings of offices from the standpoint of beauty.

3513. *Nation's Schools.* "The administration building—the newest unit in the school group." *Nation's Sch* 4:49-54 Jl '29. il
Discusses the separate building for administration and gives brief descriptions of a number of such buildings.

3514. *Office Appliances.* "The urge for beauty in office furniture." *Office Appliances* 50:30-1 D '29
Discusses the psychology of the beautiful in equipment. Floor coverings are given special attention.

3515. "Some original ideas about desks." *Office Appliances* 52:28 O '30. il
A discussion of desks for offices.

3516. "The office beautiful." *Office Appliances* 52:22-3 D '30. il
Describes a well equipped office, telling of furniture quality and placement.

3517. "Office furniture today and tomorrow." *Office Appliances* 53:22-3 Mr '31
Discusses trends in office furniture styles.

3518. "New combination has valuable features." *Office Appliances* 54:33 Jl '31. il
Describes a combination telephone stand and waste basket.

3519. "Filing system handles maps, plans, etc." *Office Appliances* 54:35, 107 D '31. il
Describes the Accoway Filing System which adapts vertical filing to the handling of maps.

3520. Reavis, W. C. and Woellner, Robert. "Labor saving devices used in office administration in secondary schools." *Sch R* 36:736-44 D '28
Tables and discussion on devices used in administrative offices.

3521. "Architectural plans of administrative offices in secondary schools." *Sch R* 37:37-43 Ja '29
Discusses office arrangement in administrative buildings.

3522. "The professional files of secondary school principals." *Sch R* 37:96-106 F '29
Report of a study of filing in the offices of 522 representative principals.

3523. Sauer, Charles A. "Reorganizing the small school office." *Am Sch Bd J* 78:54, 165-6 Ja '29. plans
Gives essential built-in features of a good office suite. Discusses location and size of office and arrangement of furniture.

3524. *School and Society.* "A central building for the New York City Board of Education." *Sch and Soc* 32:255-6 Ag '30
Discussion of a proposal to supply New York City with new centralized offices in a building favorably located.

3525. Smith, Annette. "Cleveland's Board of Education building." *Am Sch Bd J* 84:62, 64, 66 Ja '32. plans, il
Brief description of the features of a new million-dollar administration building.

3526. Smith, Hoyt D. and Hubbard, Frank W. "Elementary school office facilities." *Am Sch and Univ* 1930-31:315-20. plans
Presents the general principles recognized as good administrative practice and shows how newer office plans meet these.

3527. Starbuck, R. M. "Modern state house planning." *Domestic Eng* 134:55-8 F 21 '31. plans, il
A description of the Connecticut state office building, with some attention to the school department offices.

3528. Strayer, George D.; Engelhardt, N. L.; and Elsbree, W. S. *Standards for the administration building of a school system.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1927. plans, il, 40 p
Gives a score card for the administration building. Presents and discusses standards for the administration building, giving details for each of its divisions.

3529. Taber, Edward F. "Some basic principles of office furniture selection and arrangement." *Office Appliances* 53:22-3 Ap '31
Discusses types and arrangement of furniture for different offices.

3530. Thau, (Mrs.) Ray Singer. *A study of the office equipment in the public senior high schools and in the business offices of New York City.* Master's Thesis, New York Univ, New York City, 1928. 46 p
A comparative study of the office appliances and equipment found in all of the New York City senior high schools and those found in 50 representative business houses, large and small, in New York City.

3531. Whiteneck, H. A. "An administrative unit in the elementary school." *Am Sch Bd J* 80:92, 94 Ja '30
An excellent diagram and discussion of an administrative unit for an elementary school.

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KINDERGARTEN AND PRIMARY ROOMS

3532. Alschuler, Rose H. "A new nursery school set-up." *Childh Educ* 5:307-11 F '29. plans, il
Description of the new Winnetka, Illinois, nursery school unit which is built into the regular school plan.

3533. "Two public school nurseries." *Am Childh* 15:10-13, 59 Mr '30. plans, il
Description of the nursery school programs of the Franklin and Winnetka schools in Illinois. Floor plan of the Winnetka nursery unit.

3534. Anderson, Beatrice. "Kindergarten seating." *Sierra Educ News* 25:20-1 D '29. il
A discussion of the proper way to seat children of kindergarten age.

3535. Anderson, John E., chairman. *Nursery education.* The Century Co., New York City, 1931. 187 p
Report of the committee on the infant and pre-school child of Section III, Education and Training, at the White House Conference on Child Health and Protection. A section of this report deals with buildings and equipment, pages 62 to 81, and another with educational facilities, pages 111 to 118.

3536. Bowman, Evelyn A. "An evaluation of kindergarten—primary equipment." *Educ Bul* 17:673-8 Ap '31
A general discussion of desirable equipment for the kindergarten and primary grades.

3537. Buffum, Arme W. "Schools to fit children." *Woman's J* 15:10-11, 44 S '30. il
Discussion of special features in elementary schools and of the need for changes in our schools.

3538. Bugbee, Lloyd H. "A study of kindergarten methods in a new type school." *Nation's Sch* 1:19-25 Ap '28. plans, il
Discusses modern child instruction given in bungalow school designed to meet the needs of educational programs in which study and play are alternated.

3539. *Bulletin of the Stout Institute.* "The nursery school at the Stout Institute." *Bul of the Stout Inst* 25:28 S 1 '29
Description of a nursery school unit with a capacity of 18 pupils, located on a floor of a home economics building.

3540. *Childhood Education.* "Working drawings of equipment." *Childh Educ* 6:228-9 Ja '30

A number of drawings illustrating kindergarten equipment, submitted by the committee on equipment of the International Kindergarten Union. Shows the use of the balcony in a kindergarten room.

3541. Cooper, Frank Irving. "Kindergarten and primary school for Morril Estate." *Childh Educ* 5:318 F '29. plans

Plans and short description of the school are given.

3542. *Davis, Mary Dabney. "Plans and equipment for nursery, kindergarten, and primary education." *Am Sch and Univ* 1930-31:291-302. plans, il

Discusses many features of equipment and building which must be considered in providing for this phase of education, including floor space, lavatories, and play apparatus.

3543. Davis, Mary Dabney, and Heinig, Christine. *Housing and equipping the Washington Child Research Center.* U. S. Office of Educ, pamphlet no. 13, Ag '30. plans, il, 24 p

Statement of the program of the Washington Child Research Center and the way in which the housing and equipment provides for this program. General arrangements and costs are given.

3544. Dimock, Irene and Rood, Doris. "A kindergarten school where education is life." *Nation's Sch* 6:33-8 Jl '30. plans, il

A discussion of the value of the kindergarten and a description of the kindergarten building of the Oakton School at Evanston, Illinois.

3545. Fallis, Edwina. "The kindergarten primary room." *Childh Educ* 7:10-12 S '30. il

Discusses briefly building, playground, lighting, floor, wall space, and other items.

3546. "More suggestions for the kindergarten-primary classroom." *Childh Educ* 7:92-4; 187-90 O, D '30. il

Suggests equipment for the modern kindergarten-primary department.

3547. *Gray, Greta and Staples, Ruth. "Housing the nursery school." *Childh Educ* 5:33-6 S '28. plans

A list of specific building requirements are given along with a discussion of the purposes of the nursery school. Plans for a two-story nursery unit are given.

3548. Gwinn, J. M. "Developing an activity program." *Progressive Educ* 6:238-41 S-O-N '29. plans, il

Description of the layout and equipment of kindergarten grade work.

3549. Hahn, Julia Letheld. "Kindergarten—primary rooms in San Francisco." *Sierra Educ News* 24:16-17, 64 N '28. il

Discusses buildings, furniture, and equipment in connection with kindergarten and primary instruction.

3550. "Changing the school environment." *Childh Educ* 5:287-92 F '29. il

List of special features of the new primary rooms of the San Francisco schools.

3551. Hayes, Margaret. "Desirable equipment for the primary grades." *Peabody J Educ* 6:77-80 S '28

List of equipment used in the primary grades of schools of Craven County, North Carolina.

3552. Heinig, Christine M. "Nursery school equipment." *Childh Educ* 5:302-6 F '29

Discusses the need for particular equipment and describes some articles as certain sanitary fixtures.

3553. Howe and Lescaze. "Nursery building; the Oak Lane Country Day School, Philadelphia." *Arch Rec* 67:360-3 Ap '30. plans, il

A very brief description of the school, well illustrated.

3554. Howes, Ethel Puffer and Beach, Dorothea. *The coöperative nursery school*, p. 20-2, 55-61. Smith College, Northampton, Mass., 1928

General description of the equipment in the Smith College School. Plans and costs of equipment also given.

3555. Howes, Florine Helen. "Environment as a stimulating factor in the kindergarten-primary grades." *Childh Educ* 7:137-8 N '30. il

Discusses the effect of the environment upon the children.

3556. Hungerford, Frances Ann. *Pre-school equipment.* State Univ of Iowa, Ext Div, Dept of Child Development and Parent Educ, bul no. 263, Iowa City, Mr 1 '31. il, 78 p

Descriptions and plans of play apparatus made and used locally in the pre-school laboratories of the Iowa Child Welfare Research Station.

3557. Johnson, Harriet M. "The physical environment—activities and materials." In *Children in the nursery school*, p. 65-80. The John Day Co., New York City, 1928

Sets up criteria for the selection of equipment on the basis of observation of the behavior of small children. Rather full discussion of requirements to be met by equipment, and presentation of a detailed list of play equipment divided into two groups, roof and indoor.

3558. *Journal of Education.* "Sixty-eight high spots of Chicago schools." *J Educ* 114:395-410, 413 N '31

A grouping of very brief articles by a number of Chicago writers concerning the Chicago schools. These articles include "Kindergarten equipment," by Ellen M. Olson; "Survey of buildings," by Don C. Rogers; "Radio as aid to youth," by G. P. Drueck, Jr.; "Playgrounds," by Herman J. Fischer; and "Opportunity room at Tuley High," by C. E. DeButts.

3559. Luecke, Editha. *Play materials for children.* Master's Thesis, Teach Col, Columbia Univ, New York City, 1929. 89 p

3560. *McMillan, Margaret. *The nursery school.* E. P. Dutton and Co., Inc., New York City, 1930. 140 p

Thruout this book are many valuable suggestions on the building and equipment for nursery schools, especially of the open-air type. The Deptford school of London, of the village type, is described. Of particular interest are chapters devoted to the plan of the buildings, the garden, size of the school, attached and detached schools, and finance.

3561. Marsh, Mona Ames. "How to organize a nursery school." *Parent's M* 6:26-8 Je '31

Gives information as to equipment, in addition to instruction for organization.

3562. Montague, Harriet. "California sets up an open air nursery school." *The Forecast* 35:306-7, 360 My '28. il

Suggestions on building and equipment included in the account.

3563. Moris, Frank X. "Constructing and managing the balanced aquarium." *Sheet Metal Worker* 21:418-19; 455-6; 483, 498 Jl 11, Jl 25, Ag 8 '30. il

Although this article deals with the home aquarium, the principles involved may be applied to the construction of the aquarium for the laboratory or primary room of the school building.

3564. **National Society for the Study of Education.* "Nursery schools." *Nat Soc for Study of Educ* (28th yearbook) 1929:137-245

Discusses building facilities and equipment in Bowling Green Nursery School, New York City; Cambridge Nursery School, Cambridge; Cleveland Day Nursery, Cleveland; Franklin School Nursery, Chicago; Guidance Nursery of the Yale Psycho-Clinic, New Haven; Nursery School, Teachers College, Columbia University, New York City; Nursery School, Iowa State College, Ames; Mary Crane Nursery School, Chicago; Merrill-Palmer Nursery School, Detroit; Nursery Training School of Boston, Boston; The Play School for Habit Training, North Bennet Street Industrial School, Boston; Preschool laboratories at the Iowa Child Welfare Research Station, Iowa City; Smith College Coöperative Nursery School, Northampton; and the Walden Nursery School, New York City. One section is devoted to nursery school equipment.

3565. *Nation's Schools.* "Coördinating beauty and utility in the kindergarten." *Nation's Sch* 2:29-32 Jl '28. il

Tells how pleasant surroundings were worked into the kindergarten-primary building at the Lincoln School, Evanston, Illinois.

3566. Oakland Public Schools. *Standards for modernization of primary classrooms.* Pub Sch, Dept of Res and Auxiliary Agencies, Oakland, Calif., 1929

3567. Richardson, Patricia. "School equipment for young children." *Sierra Educ News* 25:42-3 N '29

Lists a number of factors which must be considered and describes a number of interesting equipment arrangements for small pupils.

3568. State University of Iowa. *The preschool laboratories.* State Univ of Iowa, Univ Bul, new series no. 560, Iowa City, My 24 '30. il, 32 p

A description of the physical facilities for 2-, 3-, 4-, and 5-year-old groups in the State University of Iowa training school and of the equipment used by each group.

3569. Stevinson, Emma. *The open-air nursery school.* J. M. Dent and Sons, Ltd., London, 1927. 80 p

A description of the Rachel McMillan Open-Air Nursery School, of London, and other nursery schools of England.

3570. Stillman, Harriet. "Modern classroom equipment." *Childh Educ* 5:293-6 F '29. il

Comparison of the traditional and the newer type of classroom equipment for kindergarten and primary classrooms.

3571. Stoddard, A. J. "Libraries in classrooms." *Childh Educ* 5:319-23 F '29. plans, il

Discussion of plans and equipment necessary for the reading corner in the classroom especially as applied to primary rooms.

3572. Stormzand, Martin J. and McKee, Jane W. "The primary room and equipment." In *The progressive primary teacher,* pt. I, p. 3-46. Houghton Mifflin Co., Boston, 1928

Discussion of traditional and modern primary classrooms, equipment, storage, arrangement of furniture, and decoration. Also a minimum and a generous list of equipment and toys for primary rooms.

3573. Taylor, Mary. "The American baby steps out." *Woman's J* 15:14-16 Jl '30. il

Discusses college and university nursery schools as laboratories.

3574. University of Nebraska. *The University of Nebraska Nursery School.* Univ of Nebraska, Univ Bul, series 36, no. 31, Lincoln, S 1 '31. plans, il, 24 p

Contains a brief description of the building and equipment used by the University of Nebraska and gives the floor plans of the building.

Cross-index

4	892	1700	3578
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COMMUNITY ROOMS

3575. Huff, Elizabeth M. *The community room in the platoon school*, p. 1-31. Richard G. Badger, Boston, 1930

Discusses the community room and its part in the school program.

3576. *Nation's Schools.* "The schoolhouse as a community center." (ed) *Nation's Sch* 5:78 Ap '30

Discussion of the community use of the school building as a center. A number of benefits to be derived are presented.

3577. Oakes, Elizabeth B. "The social room as a laboratory for the dean of girls." *Sch R* 38:760-4 D '30. plans

Discusses the need for the social laboratory and describes the provisions in the Proviso Township High School, Maywood, Illinois.

3578. Pickell, Frank G. "An interesting departure in school buildings." *Am Sch Bd J* 82:51-2, 133 F '31. plans, il

Description of the Baldwin Street Community House, an $85,000 annex of the Baldwin Street School of Montclair, New Jersey. Structure contains kindergarten, library (both public and school), office for community workers, community social room, sewing room, domestic science room, teachers' dining room, and teachers' sitting room. The building is heated with an oil burner.

Cross-index

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2001	2096	2207	

ART AND DRAWING ROOMS

3579. Bruce Publishing Company. "Drafting-room layouts" *Bruce's Sch Shop Annual* 1930:194-7

Typical drafting-room layouts for intermediate, junior-high, senior-high, trade, technical, and vocational schools. Plans only.

3580. "Drafting-room layouts." *Bruce's Sch Shop Annual* 1931:172-4

Includes only plans for drafting-rooms.

3581. "Drafting-room layouts." *Bruce's Sch Shop Annual* 1932:138-9

Plans for junior and senior drafting-room shops. Plans only.

3582. Cuttriss, Elizabeth L. "The art rooms in the secondary school." *Jr-Sr H Sch Clearing House* 4:221-2 D '29

Discusses the equipment and finish of the art room as a basis for its atmosphere.

3583. D'Amico, Victor E. "The modern art room." *Progressive Educ* 8:575-7 Ja '31. il

Discusses the modern art room and the arrangement, lighting, and equipment needed for proper instruction in art.

3584. *School Executives Magazine.* "Drawing and shopwork in high school." *Sch Executives M* 48:503, 520 Jl '29. il

Discusses the use of rooms and equipment for dual purposes.

Cross-index

32	1686	2467	3258
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PUBLIC SPEAKING AND MUSIC ROOMS

3585. *Brill, James A. "Junior high school music department." *Sch Executives M* 51:318-19 Mr '32

Description of space and equipment needs for music rooms, instrumental rooms, and the auditorium for the use of music classes.

3586. Church, Nowal L. "Provisions for musical activities in new high schools." *Am Sch and Univ* 1932-33:222-6. plans, il

Discusses the rehearsal room, the general music room, the instrument room, and the individual practice rooms as to sound-proofing, acoustics, lighting, ventilation, size, blackboard, and equipment.

3587. Gelber, Max L. "Sequoia's music building." *Sierra Educ News* 25:32-3 O '29. plans

Description of the music building of the Sequoia Union High School at Redwood, California.

3588. Langworthy, Harry W. "A junior-high-school music unit." *Jr-Sr H Sch Clearing House* 4:214-16 D '29. plans.

A good description of the music unit in the Gloversville, New York, high-school building.

Cross-index

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CLINIC AND MEDICAL INSPECTION ROOMS

3589. Howe and Church. "The new infirmary at St. George's School." *Am Sch and Univ* 1931-32:401. plans, il

Description of a school infirmary at Newport, Rhode Island.

3590. Kerr, James. *The fundamentals of school health.* The Macmillan Co., New York City, 1927. 856 p

Gives a brief discussion, on page 644, of the nurse's room as a part of the school building. Standards adopted by Boston are given. Very extensive discussions are given of seats and desks, open-air schools, sites and buildings, ventilation, warming, and illumination. Results of a number of studies are given in connection with the discussion, and numerous interesting suggestions are made.

3591. Moore, Susa P. "A school that offers the best in physical care." *Nation's Sch* 7:28-32 Ap '31. il

Story of the Cranbrook School, Detroit, the gift of newspaper men, and of the relation of its equipment to its operation. It is different.

3592. Owen, Lois L. *School nursing manual.* State of Pennsylvania, Dept of Pub Instr, bul no. 52, Harrisburg, 1929. 41 p

Beginning on page 21 the author deals with the hygiene of the school room, discussing the school laws on lighting, heating, and ventilating; desks and seating; ceilings, walls, and woodwork; water supply; and toilets.

3593. Rodin, Frank H. "Eye examination of school children." *Am Medical Assn J* 93:911-17 S 21 '29. plans

Tells of the use of eye testing equipment and suggests a plan for the nurse's room. Discusses sight-saving classes.

3594. Rogers, James Frederick. "Health clinics in public schools." *Am Sch and Univ* 1931-32:304-5. plans, il

Describes the layout for school medical inspections, giving size, arrangement, and equipment of the rooms.

3595. Rowell, Hugh Grant. "Equipping school health rooms." *Sch Management* 1:20-1, 34-5 Mr '32. plans

Discusses equipment for nurse's and doctor's rooms and the practical arrangements of these.

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SCHOOL SEATING AND THE SELECTION AND PURCHASE OF SCHOOL FURNITURE

3596. *American School Board Journal.* "Prison-made furniture and supplies for the schools." (ed) *Am Sch Bd J* 76:90-1 Ja '28

Takes the position that school furniture and supplies require the best of creative skill and genius.

3597. "Adopt standards for folding and portable chairs." *Am Sch Bd J* 76:92 Ap '28

Gives recommended standards of the Bureau of Standards, U. S. Department of Commerce, for folding and portable wood chairs.

3598. "The research idea and the school supply industry." (ed) *Am Sch Bd J* 78:64 Mr '29

A discussion of the tendency to have equipment and supplies designed to meet needs determined by studies rather than developed by the factory mechanic to fit a whim or fancy.

3599. "How old the new?" *Am Sch Bd J* 78:105-6 Ap '29. plans, il

This article shows that the staggered school desk arrangement was used as early as 1855.

3600. "Timely negotiations for school supplies and equipment." (ed) *Am Sch Bd J* 78:70-1 Je '29

Discussion of the need for early seasonal buying.

3601. "Contracting for schoolhouse equipment." *Am Sch Bd J* 79:37, 128 D '29

The experience of a business manager in a small midwestern school city in the matter of irregularities in schoolhouse construction.

3602. "Trade practices in the school-furniture industry." *Am Sch Bd J* 80:56 Mr '30

Discussion of the resolutions of a conference of the Public Seating Industry relative to evil trade practices in relation to school bidding.

3603. "Movable school furniture." *Am Sch Bd J* 82:101 Mr '31
Lists reasons why movable furniture is more desirable than the stationary kind.

3604. "Exacting certified checks with school bids." (ed) *Am Sch Bd J* 83:63 S '31
Discusses the tendency to do away with the certified check requirement as an injustice to bidders.

3605. "Selection of school seating." *Am Sch Bd J* 84:76 F '32
Comments and quotations from a discussion on school seating issued by the New Jersey State Department of Education. Lists the three principal criteria: comfort, vision, and hearing.

3606. Anderson, Beatrice. "The seating of kindergarten children." *Am Sch Bd J* 81:64-5 Jl '30. il
Discusses defects in seating and describes methods used in determining the proper specifications for kindergarten seating.

3607. Arp, J. B. "Writing, posture, and school seating." *Am Sch Bd J* 82:122-5 Je '31. il
Points out the need for a short arm rest on chair-desks to prevent bad posture while writing.

3608. *Bennett, Henry Eastman. *School posture and seating.* Ginn and Co., Boston, 1928. 323 p.; reviewed in *Bul of Dept of Sec-Sch Prin of the N.E.A.*, no. 23, p. 4-5, O '28; also reviewed in *J Home Econ* 20:769 O '28; also reviewed in *Hygeia* 6:653 N '28
Data from a study of 3,700 school children are used as a basis for this work. Seating arrangement and installation of seats are discussed. This is an elaboration of the author's Doctor's Thesis, University of Chicago, 1925.

3609. "Tablet arm chairs, their use and abuse." *Am Sch Bd J* 77:34 N '28
A discussion of the advantages and disadvantages of tablet arm chairs in schools of different levels.

3610. "School posture and seating." *Am Sch and Univ* 1928-29:226-9. il
In this article Dr. Bennett discusses the seating problem, seat height, seat and back form, types of seating, and other interesting items.

3611. "Adventuring in kindergarten ideals." *H Sch Teach* 6:126 Mr '30; also *Sch and Community* 16:179-81 Mr '30; also *Kans Teach* 31:19-20 Ap '30
Description of the ideal seating provisions for kindergarten and primary rooms.

3612. "Forty years of school seating." *Am Sch Bd J* 82:59-60, 118, 120 Mr '31
A history of the development of school seating and a plea for a scientific approach today.

3613. *Ideals and standards of classroom seating.* American Seating Co., Grand Rapids, Mich., 1931. il, 16 p
Discusses the essentials of good seating and different types of desks. Gives grade distribution of desk sizes.

3614. *Essentials of hygienic seating.* American Seating Co., Grand Rapids, Mich., 1931. plans, il, 16 p
Discusses the relation of seating to posture. Gives directions for the adjustment of seats and desks and suggestions for lighting and seating arrangements.

3615. Beutler, A. Louise. *A study of the subject matter and equipment needs of a city junior high school community.* Master's Thesis, New York State Col for Teach, Albany, 1930
Report of a study which was made for the purpose of determining what instruction in home economics was needed by the children of a section of the city, and what equipment would be needed in order to give that instruction. Used as a basis for recommendations for a new junior high school.

3616. Braught, E. O. *Supplying equipment to schools that are participating in Ohio's educational equalization fund.* Master's Thesis, Ohio State Univ, Columbus, 1930. 79 p

3617. Broody, K. O. "Modern school seating." *Neb Educ J* 11:136-7 Mr '31. il

3618. Butler, Leslie A. "Are your pupils comfortably seated?" *Nation's Sch* 5:63-6 Je '30. il

A survey was made of the seating facilities in the schools of Grand Rapids, Michigan. More than 14,000 sittings in the elementary schools were considered in the survey.

3619. *Elementary School Journal.* "Fixed or movable school furniture." *El Sch J* 30:413-14 F '30

Presentation of arguments for and against movable furniture, copied from *School Topics*, official publication of the Cleveland schools.

3620. Engelhardt, Fred and von Borgersrode, Fred. *Accounting procedure for school systems.* Columbia Univ, Teach Col, Bur of Publ, New York City, 1927. 130 p

Discusses among other things some equipment of administrative offices essential for proper accounting.

3621. Ericson, E. E. "Simple school desk as a wood-shop project." *Ind Educ M* 31: 98-9 S '29. il

Directions for making a school desk and discussion of the value of such work.

3622. Franklin, Emma H. *A study of the equipment of the high schools as shown by the examination of one hundred first year normal school students.* Master's Thesis, New York Univ, New York City, 1930. 73 p

3623. Garner, J. R. *The relation of posture to tuberculosis.* American Seating Co., Grand Rapids, Mich., 1931. 9 p

Discusses the effect of posture upon physical development and the effect of school seating upon the posture of children. This is reprinted from the June, 1931, issue of the *International Journal of Medicine and Surgery.*

3624. Gildart, Ralph S. "The romance of steel." *Office Appliances* 54:20-1 D '31. il

Discusses trends in furniture and emphasizes making it of steel.

3625. Grand Rapids Public Schools. *Survey of seating in Grand Rapids elementary schools.* Pub Sch, Grand Rapids, Mich., Mr 4 '29. 23 p

Report of a survey which showed seating to be too high for the majority of pupils in all grades; seats in 23 per cent of the desks and nearly all of the chairs to be too deep from front to back; and desks to be too high and to lack adequate clearance of the knees.

3626. Guyer, R. T. "Estimating school equipment costs—a pupil station method." *Am Sch and Univ* 1931-32:163-72

Describes a method of estimating costs and gives tabulation sheets for different types of rooms.

3627. Hart, Chester. "Flexibility in school seating equipment." *Nation's Sch* 8:104, 106 S '31. il

Shows how the American Seating Company has embodied the principle of flexibility in its newest type seats.

3628. *High School Teacher.* "Seating highlights." *H Sch Teach* 6:376 N '30

Discussion of some interesting phases of the seating problem.

3629. "New all-purpose school desk proves sensation to school men of Detroit." *H Sch Teach* 7:238 Je '31. il

A brief description of a new general purpose school desk manufactured by the American Seating Company.

3630. Holmes, W. H. "Equipment apparatus that lends itself to modern progressive ideas in education." *Am Sch and Univ* 1929-30:275-9. il

Discusses equipment for the modern school. Stresses kindergarten, primary, visual, and reading devices.

3631. Hoss, Lula B. *The new education applied to the intermediate grades of the public schools*, p. 131-6. Master's Thesis, Indiana Univ, Bloomington, 1931

Suggests types and arrangement of equipment to fit the pupil in the new type school.

3632. Illman, A. T. "Arrangement of equipment as it affects the social environment of the classroom." *Childh Educ* 7:133-6 N '30. il

Discussion of choice and arrangement of equipment as a factor in classroom work.

3633. Knox, Rose B. *School activities and equipment.* Houghton Mifflin Co., Boston, 1927. 386 p.; reviewed by Estaline Wilson in *J Educ Res* 17:144-5 F '28; reviewed by Henry Harap in *Sch and Soc* 27:49-50 Ja 14 '28

Gives lists of equipment and suggestions as to their use.

3634. Lovejoy, Philip. "Cleveland exhibits bring variety of ideas to school men." *Nation's Sch* 3:88, 90, 92 Mr '29

A description of the display of manufacturers and jobbers at the meeting of the Department of Superintendence at Cleveland in 1929.

3635. "New equipment displayed at winter meeting." *Nation's Sch* 5:98, 100, 102 Mr '30

Description and discussion of the display of manufactured goods for school equipment made at the Atlantic City meeting of the Department of Superintendence in 1930.

3636. "Many improvements feature new school equipment." *Nation's Sch* 7:76-8, 80, 82 Mr '31

Discussion of the exhibit of school supplies at the Detroit meeting of the Department of Superintendence. New features and improvements are described.

3637. Lundberg, L. D. *A comparison of three types of seating for children of the kindergarten and primary grades.* Pub Sch, Flint, Mich., 1928; also reported under title "A study in school seating." *Am Sch Bd J* 77:51-2, 140, 143 O '28

A study made to determine the best type of seating in the kindergarten and primary grades by a critical comparison of fixed seats, tables and chairs, and movable chair-desks on the basis of some 20 separate factors or standards.

3638. "Study on the seating of the kindergarten and the primary grades." *Bul of Dept of El Sch Prin of the N.E.A.* (8th yearbook) 8:295-306 Ap '29

3639. McClinton, J. W. "School furniture brown." *Am Sch Bd J* 79:40 N '29

Report of the work of the U. S. Department of Commerce on the simplification and standardization of color finishes so far as they apply to school furniture.

3640. "Simplification of school furniture finishes." *Am Sch and Univ* 1930-31: 321-2

Shows how styles in furniture are changing to meet the changing conceptions of education.

3641. *McNeill, C. C. "The development of modern school seating." *Sch Executives M* 49:22-4, 54 S '29

Traces the development of school seating from the earliest beginnings in America to the present.

3642. Mills, Elbert R. "A study of school desks and seats." *Am Sch Bd J* 79:55, 150; 54, 120, 122 Jl, Ag '29
A discussion of the problem of fitting children with proper seats and desks. A number of types are discussed.

3643. Moody, Chester A. "Solving overcrowding problems in a high school." *Nation's Sch* 4:68-70 Jl '29. il
A description of equipment in the Arlington, Massachusetts, high school designed to care for increased numbers of pupils and to relieve congestion.

3644. "Applied sleight of hand." *J Educ* 111:691 Je 16 '30
Discussion of the proper way of securing the maximum use of a building.

3645. *Morris, Lyle L. "Equipment procedure for new schools." *Sch Executives M* 50:403-6, 434 My '31
Discusses and illustrates specifications, general conditions of bidding, types of bids, determination of the successful bidder, awarding of contracts, performance bonds, and installation of equipment.

3646. Nash, Raymond W. "Fixed *vs.* movable seating." *Am Sch Bd J* 79:72, 74 S '29
A letter addressed to the editor appealing for furniture fixed to the floor.

3647. Netzhammer, C. A. "Selling quality to the public." *Office Appliances* 52:28-30 Ag '30. il
Discusses the quality of equipment, dealing particularly with chairs.

3648. Nicholas, Prudence. "How Des Moines has simplified specifications for purchases." *Am Sch Bd J* 77:47-8, 95-6 D '28
Details the plan of Des Moines for the preparation of specifications for bidders on school supplies and equipment.

3649. *Office Appliances.* "Aluminum chairs built by 'G-F'." *Office Appliances* 52:30 S '30. il
Describes a chair for office and class use. This is made of an aluminum alloy and has the advantage of being very light.

3650. Osborne, G. H. "Finishing school desks." *Ind Arts and Voc Educ* 20:30 Ja '31
Tells how a saving in upkeep can be made by having the work done by the school department of industrial arts.

3651. Parker, Edith P. "Selection of map equipment for elementary schools." *El Sch J* 28:429-35 F '28
A discussion of items to be taken into consideration in determining the worth of maps for school equipment.

3652. Peel, A. J. "Stores control." *Am Sch Bd J* 76:44, 136, 138, 140 D '27. plans
Discusses supply and equipment control thru store plans. Rooms needed are discussed.

3653. Pickell, Frank G. "The evolution of equipment in the elementary school." *Am Sch and Univ* 1931-32:285-9
Tells of the changes that have come in elementary equipment in the last fifty years. More recent significant changes are stressed.

3654. *School Executive's Magazine.* "Adopts one price policy." *Sch Executives M* 48:411-12 My '29
A discussion of standardization of school equipment and the necessity for a one-price policy.

3655. "Proper seating." *Sch Executives M* 49:294 F '30
Brief statement of school seating standards as quoted from Dr. Charles C. Wilson, director of health, Evansville, Indiana.

3656. Sexson, John A. "Recent tendencies in school equipment design." *Nation's Sch* 6:50-4; 26-32 S, O '30. il

A discussion of the changes that have taken place in educational practice relative to equipment. Illustrations are taken from a number of modern schools.

3657. Sheldon, Marion. "Experiments in American history method." *Sch M* 11:322-5 Mr '29. diag

Description of a seating plan for group work in American history.

3658. State of Indiana. *Educative equipment for modern schools.* State Dept of Pub Instr, bul no. 108, Indianapolis, 1929. 32 p

Suggests, among other things, proper seating and furnishing for rooms for mathematics and the language arts.

3659. State of New York. *Standard equipment recommended for rural schools* [by] *the Rural Education Bureau, State Education Department.* Univ of the State of New York, bul no. 934, Albany, O 15 '29. 32 p

3660. Swalwell, B. L. "School seating." *Modern Educ* 3:34 O '30

3661. Van Dyke, G. E. "Getting full value in school business management." *Am Sch Bd J* 83:49-50, 119-20 S '31

Discussion of the method of determining the amount of equipment needed in a new building. Emphasizes need for definitely setting aside a specific amount to be used for equipment. Standardization in purchasing is economical if standards are frequently scrutinized.

3662. Watrous, Valerie. "Los Angeles goes modern in school supplies and equipment." *Am Sch Bd J* 83:41-3 Jl '31. il

Tells of the adoption of tables and chairs in the elementary grades and in many high-school classrooms. Other new types of equipment are to be found now in this school system.

3663. Wiese, F. H. "The service of the school equipment specialist." *Am Sch Bd J* 78:122, 124 F '29

Discussion of the need for a special equipment engineer to advise in the selection and installation of school equipment.

3664. Zillier, V. "Equipment, an essential foundation." *Childh Educ* 7:139-42 N '30. il

Discusses the importance of proper equipment in the process of education.

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THE CONSTRUCTION AND MAINTENANCE OF FLOORS

3665. *American Architect.* "The care of oak floors." *Am Arch* 134:322 S 5 '28
Gives instructions for finishing and maintaining oak floors. Different kinds of finish are compared.

3666. Armstrong Cork Company. *Public floors of enduring beauty.* Armstrong Cork Co., Lancaster, Pa., 1930. il, 33 p
Discusses design, costs, and qualities of floor coverings. Care of these is also discussed. Illustrations of their use in schools are given.

3667. Barker, Howard. "How Salt Lake City maintains beautiful wood floors." *Am Sch Bd J* 83:31, 90 O '31
Procedure and advantages in the use of the oil-mop.

3668. Bruner, Charles. "The rehabilitation and care of schoolhouse floors." *Am Sch Bd J* 78:60, 146, 148 Ap '29
A summary of a study of the maintenance of schoolhouse floors. A number of common practices are listed. The writer's experience with floor finishes is also set forth.

3669. Carlquist, E. V. "Selecting, laying, and maintaining linoleum floors." *Nation's Sch* 4:53-7 D '29. il
Discussion of the use of linoleum as a means of rehabilitating old and unsightly floors and of protecting new ones. Installation and maintenance are also discussed.

3670. Congoleum-Nairn, Incorporated. *Facts you should know about resilient floors for schools.* Congoleum-Nairn, Inc., Kearny, N. J., 1929. il, 8 p
Discusses the need for well-finished floors and tells how to provide them. Suggestions for types of floors for different rooms are made. Qualities to be considered for floors for different services are listed.

3671. *Resilient floors.* Congoleum-Nairn, Inc., Kearny, N. J. 1931. il, 32 p
Describes floor coverings in the libraries, gymnasiums, and other rooms in such schools as Fordson High School, Fordson, Michigan; Cossett Avenue School, La Grange, Illinois; and Blackhawk Park Fieldhouse, Chicago.

3672. Eroskey, Frank. "Fireproof formless floor construction." *Am Arch* 133:18, 20 (adv) Ja 5 '28. il
Describes the construction of floors without using temporary forms which, of course, would not be fireproof.

3673. Harriman, J. B. "Costs of school floors." *Boston Soc of Civil Eng J* 18:225-32 Je '31

3674. Houck, B. A. "Care of ailing floors." *Prac Home Econ* 8:201 Jl '30
Discusses preparation and maintenance of finished and unfinished floors.

3675. Lewis, John W., chairman. "Report of sub-committee on the treatment and care of floors in public school buildings." *Nat Assn Pub Sch Bus Officials* (Proc of 18th annual meeting) 1929:60-3
Considers the effects of certain cleaners and the worth of certain types of floor coverings.

3676. Longshore, James Haworth. "Schoolhouse floors and their maintenance." *Am Sch Bd J* 80:104 Mr '30
Discusses the need for clean, sanitary, attractive floors and the best ways of maintaining them.

3677. Miller, Julius W. "The problem of flooring in schoolhouses." *Am Sch Bd J* 76:136, 138 Ja '28
Sets out a number of considerations which must be taken into account in dealing with school floors. Reports of laboratory tests are given.

3678. *Nation's Schools.* "A new joist that eliminates the squeaks from schoolhouse floors." *Nation's Sch* 4:50 Ag '29
Describes a new steel joist with a wood nailing screed to which to nail rough flooring.

3679. Penn, Henry. "'Battledeck' floor construction." *Am Arch* 140:34-5, 88 Jl '31. plans, il
Gives instructions for the construction of this type of floor and discusses some of the outstanding features.

3680. Perry, Thomas D. "Research in wood floors for schools." *Am Sch Bd J* 83: 118, 120 Ag '31. il
Discusses five limitations commonly found in wood flooring and shows how these may be overcome by the use of plywood flooring.

3681. Reeves, Charles Everand. "The daily care of school building floors." *Am Sch and Univ* 1928-29:156-9
Discusses in detail the daily care of floors, and tools for cleaning including vacuum cleaners.

3682. "Keeping the school floors clean." *Nation's Sch* 7:60-3 My '31. il
Time-saving and money-saving methods for cleaning school-building floors are discussed.

3683. "When and how shall the school floors be cleaned?" *Nation's Sch* 7:25-7 Je '31. il
Complete instructions as to the best cleaning methods to use on wood, terrazzo, composition, and cement floors are given.

3684. "The science of floor treatment." *Nation's Sch* 8:69-71 Jl '31
Presentation of methods to use in treating various kinds of schoolhouse floors.

3685. Taylor, C. Stanley. "Economical concrete floors for school buildings." *Nation's Sch* 1:41-4 Je '28. il
Describes a new type of concrete flooring and states the advantages of using it.

3686. Vanderwalker, F. N. *Modern floor finishing.* B. C. Johnson and Son, Racine, Wis., 1931. 84 p
Contains valuable suggestions for finishing floors.

3687. Wade, Jean. "The schoolroom floor and how to select it." *Am Educ Digest* 48:108-10 N '28. il
A discussion of floors and floor coverings, their costs and qualities. Maintenance is also considered.

3688. "Consider the floor." (ed) *Library J* 54:126-7 F 1 '29
Discussion of the merits of each of several kinds of library floor coverings.

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BLACKBOARDS AND BULLETIN BOARDS

3689. *American School Board Journal.* "Standards for composition blackboards." *Am Sch Bd J* 78:92 Ap '29

Gives the stock items in the revised standards for composition blackboards set by the Bureau of Standards of the U. S. Department of Commerce.

3690. Boone, G. N. "Combination bulletin board." *Ind Arts and Voc Educ* 20:298-9 Ag '31. il, diag

Describes the construction of a bulletin board.

3691. Goins, Jesse Lee. *The utilization of blackboards by teachers in secondary schools.* Master's Thesis, Univ of Chicago, 1931. 69 p

The title is self-explanatory.

3692. Gove, R. R. "Bulletin board." *Ind Arts and Voc Educ* 20:278-80 Ag '31. il, diag

Describes the construction of a bulletin board.

3693. Robbins, L. M. "Success habits—through thinking and doing." *Ind Arts and Voc Educ* 20:280-1 Ag '31. il

Tells of the use of the bulletin board as equipment in the proper character training of boys. The psychology of the plan is to give daily training to form habits of right thinking.

3694. Schmidt, H. W. "Blackboards: their height and width." *Am Sch Bd J* 81:43-5 S '30. il, tables, charts; also *Nat Council on Schoolhouse Construction* (Proc of 8th annual meeting) 1930:26-37. il

A discussion of the use of the blackboard and a report of a study conducted by the author to determine a number of standards.

3695. "The use of blackboards in elementary schools." *Am Sch Bd J* 83:39-41, 107 Ag '31; reprint in *Nat Council on Schoolhouse Construction* (Report of 9th annual meeting) 1931:13-20

Results of a questionnaire study of 423 classrooms showing little variation as to the amount or location of blackboards in various grades or in new and old buildings. The typical room has 45.7 ft. on the front and side of the room and a 4.9 ft. bulletin board.

3696. Snell, Foster Dee and Fox, Beatrice S. "Glass versus slate blackboards." *J Chem Educ* 8:320-7 F '31

The authors present data to show that glass may be used instead of slate for school blackboards.

3697. *State of California. *The type, design, installation, and care of blackboards.* State Dept of Educ, Div of Schoolhouse Planning, bul no. K-3, Sacramento, 1930. plans, 11 p

Discusses the importance of good blackboards, their care and proper installation. Names some different types.

3698. State University of Iowa. *Aids for elementary school teachers. 1. Bulletin boards in the elementary school.* State Univ of Iowa, Ext Div Bul, no. 258, Iowa City, D 15 '30. il, 20 p

3699. Weaver, F. "Educational bulletin boards." *The Instructor* 40:54, 73 Ja '31. il
Discusses the proper use of the bulletin board as educational equipment.

3700. Woodbury, M. "Bulletin boards useful in teaching subjects." *Neb Educ J* 10: 570 N '30

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MUSEUMS

3701. Colbert, Russell. "High school history museums." *Historical Outlook* 18:329-30 N '27
A discussion of the value of the history museum for the high school and some instructions for its development.

3702. Pingrey, Jennie L. "A home-made museum." *Historical Outlook* 21:266-7 O '30
Discusses the value of the museum as a part of the school and offers suggestions for building one.

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DORMITORIES

3703. *American Architect.* "St. Paul's School dormitory." *Am Arch* 135:179-93 F 5 '29. plans, il
Pictures and floor plans.

3704. Dickins, Dorothy. *Agricultural high school dormitories of Mississippi.* Mississippi A and M Col, Agri Experiment Station, bul no. 293, Agricultural College, Ag '31. 42 p

Report of a study of 47 agricultural high schools of the state as to dormitory provisions. Among other things studied were grounds, lighting, heating, and plumbing of dormitories.

3705. Lathrop, Edith A. "Dormitories for Montana public high school pupils." *Sch Life* 13:92-3 Ja '28

Discusses dormitories as a needed feature in connection with schools in some localities. Some of these buildings are described.

3706. Lyford, Carrie Alberta. *The school dormitory.* M. Barrows and Co., Boston, 1932. 200 p

Discusses various phases of the school dormitory.

3707. McMullen, Frances D. "Dormitories for rural school children." *The Forecast* 35:302-4, 348 My '28

Brief descriptions of some of the school dormitories of Montana.

3708. *Nation's Schools.* "High school dormitories prove successful in Montana." *Nation's Sch* 1:94, 96 F '28

Report of a study of public school dormitories by Jessie E. Richardson of the University of Montana.

3709. Swetland, Roger W. "Austen Colgate Hall at Peddie." *Am Sch and Univ* 1929-30:64-5. plans, il

A very brief description of a new building at Hightstown, New Jersey.

3710. Ward, F. J. "High-school dormitory in a rural Montana district." *Am Sch Bd J* 79:49-51, 125 Ag '29

Discusses the construction, financing, and use of school dormitories.

3711. Woodward, Harry Reuben. *Public high school dormitories in western states.* Master's Thesis, Leland Stanford Junior Univ, Stanford University, Calif., 1930

SOCIAL STUDIES ROOMS

3712. Baldwin, J. W. *The social studies laboratory.* Columbia Univ, Teach Col, Contr to Educ no. 371, New York City, 1929. 98 p

Pertinent data are given relative to equipment for social-science teaching. The author believes that reading should be supplemented by concrete and first-hand experiences furnished thru modeling, map construction, excursions, utilization of films, slides, stereoscopes, pictures, and other devices.

3713. Finch, Charles Edgar. "The social studies classroom equipment." *Jr-Sr H Sch Clearing House* 4:226-9 D '29

Discusses needed changes in room construction and equipment for social studies under the new technique of teaching.

3714. Glick, Annette. "Slide-making and the social studies laboratory." *Historical Outlook* 22:205-10; 279-84; 350-6 My, O, N '31. il

Discussion of home-made laboratory equipment for the social studies laboratory, stressing slides.

3715. Littell, H. V. and Taylor, Grace. "The social-science laboratory." *Jr-Sr H Sch Clearing House* 4:579-82 Je '30

Discusses the teaching of history by the laboratory method and describes the room and equipment for such in Saranac Lake, New York, high school.

3716. McFarland, K. W. "Plan for a social science bulletin board." *Historical Outlook* 19:395-6 D '28

Discusses among other things the construction of the bulletin board and equipment to be used with it.

3717. Wiechman, Janet Black. *A survey of equipment and materials used in social studies departments of the Los Angeles junior high schools.* Master's Thesis, Univ of Southern California, Los Angeles, 1930. 60 p.; abstract in *Annotated index of theses and dissertations in education*, p. 87. Univ of Southern California, Sch of Educ, Los Angeles, 1930

Tells of making a detailed inventory of equipment and materials in these departments by use of a checking list developed by the author. Also suggests certain improvements.

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STORES

3718. Butterfield, Clarence U. *The administration and supervision of student stores in the high schools of California.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. 88 p.; abstract in *Bul of Dept of Sec-Sch Prin of the N.E.A.*, no. 36, p. 28-9, Ap '31

Among other things this thesis deals with the administration and space provisions for student stores in 35 of the largest high schools in California.

FOREIGN LANGUAGE ROOMS

3719. Pattee, Edith. "Equipment for teaching Latin, French, Spanish, and German." *H Sch* 7:11-14 N '29

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TRADE SCHOOLS

3720. *American Educational Digest.* "The Robert H. Cole Trade School." *Am Educ Digest* 47:252-4 F '28

A brief description of the Southbridge, Massachusetts, school and its connection with part-time education.

3721. *American School Board Journal.* "The Beloit Vocational School." *Am Sch Bd J* 78:61, 147 F '29. plans, il

A description of Beloit's $146,000 vocational school, a building without basement, having a capacity of 200.

3722. "The South Park Trade School, Beaumont, Texas." *Am Sch Bd J* 80:60-1 Je '30. plans, il

A brief description of the $22,659 South Park Trade School building, having a capacity of 400.

3723. "The Connelley Trade School for Boys." *Am Sch Bd J* 82:43-5, 120 Ja '31. plans, il

Describes a building with a capacity of 1,600 students. It was built in 1930, and contains 17 classrooms and other academic facilities. The section of the building which houses the shops is in factory-type style. The building contains 3,900,000 cu. ft. and was erected at a cost of $1,777,081 or 33.53¢ per cu. ft.

3724. *Architectural Record.* "The South Park Trade School, Beaumont, Texas." *Arch Rec* 68:286-7 O '30. plans, il
Gives pictures and floor plan.

3725. Boland, Frederick W. "The Clifford B. Connelley Trade School, Pittsburgh, Pennsylvania." *Ind Educ M* 31:369-75 Ap '30. plans, il
Describes briefly a building which cost 33.5¢ per cu. ft., and tells of its organization and equipment.

3726. McCreary, A. G. "The new building of the Beloit Vocational School." *Ind Educ M* 30:400-1 Ap '29. il
Describes the Beloit Vocational School and tells of its equipment and grounds.

3727. *Modern Public Buildings.* "The new Oshkosh Vocational School." *Modern Pub Bldgs* 2:22-3 F '28. plans, il
Description of the outstanding features of a new $387,000 vocational school building at Oshkosh, Wisconsin.

3728. Spencer, T. E. "Industrial-arts unit of the Hadley Vocational School." *Ind Educ M* 32:86 S '30. il
A brief description of the industrial-arts unit of a St. Louis vocational school.

3729. White, Samuel S. "A county vocational school." *Ind Educ M* 30:394-6 Ap '29. il
Describes a $950,000 high school at Camden, New Jersey, equipped to teach ten trades.

3730. Wing, Francis H. "The new Burgard Vocational School." *Ind Educ M* 30:373-4 Ap '29. il
A brief description of a new boys' school in Buffalo, New York.

3731. Yardley, Ralph W. "A school that provides practical training for industry." *Nation's Sch* 6:79-80 Jl '30
A general discussion of the Lane Technical High School, Chicago, and a brief description of the plant.

3732. Young, Lloyd P. "Factors which have influenced the design of the Holyoke Vocational School." *Am Sch and Univ* 1931-32:413-15. plans, il
Description of the special type construction and general layout of the school.

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SPECIAL SCHOOLS AND ROOMS

3733. *American School Board Journal.* "The Harry Moore School for Crippled Children." *Am Sch Bd J* 83:111 Ag '31
Brief description of a school for crippled children in Jersey City, New Jersey.

3734. Butterworth, Julian E. "Special-room facilities in superior consolidated school buildings." *Am Sch and Univ* 1931-32:70-6. il
Some conclusions based on a study of available data and on general observations relative to special rooms in rural and consolidated schools.

3735. Day, H. E.; Fusfeld, I. S.; and Pintner, Rudolph. *A survey of American schools for the deaf*, Ch. VI and Ch. IX, p. 99-127, 181-91. Nat Res Council, Washington, D. C., 1928

A summary of 29 residential and 13 day schools for the deaf, with specific reference to equipment and physical facilities on pages 99 to 127 and 181 to 191 respectively.

3736. Dunlop, Gladys L. "Sightsaving in the schools." *Nat Educ Assn J* 18:269-70 N '29

Contains some helpful suggestions on physical facilities of sight-saving rooms.

3737. "Organization of sight-saving classes." *Am Sch Bd J* 83:34-5 Ag '31; also *Sight-Saving R* 1:42-7 D '31

Discusses the physical features of a room designed for sight-saving classes. Room should be centrally located, have adjustable movable furniture, and conform to regular standards as to orientation, lighting, etc.

3738. Dunning, Neal M. and Moehlman, Arthur B. "Two new schools widen educational activities of Michigan cities." *Nation's Sch* 3:58-62 Je '29. plans, il

Brief description of the Dr. Charles H. Oakman School, Detroit, designed for handicapped children, and the Robert Trombly School, Grosse Pointe, Michigan.

3739. *Elementary School Journal.* "Crippled and otherwise handicapped children in Des Moines." *El Sch J* 30:173 N '29

Short description of a special school to be erected in Des Moines, taken from *New York Times.*

3740. Goodsell, Gilbert Oscar. *The housing of extra-curricular activities in the senior high school.* Master's Thesis, Univ of Southern California, Los Angeles, 1929. 72 p.; abstract in *Bul of Dept of Sec-Sch Prin of the N.E.A.*, no. 36, p. 41-3, Ap '31

Report of a study of the housing of extra-curricular activities in the 14 senior high schools of the Los Angeles city school district for schools ranging in enrollment from 550 to 3,200.

3741. Grigsby, Rall I. "The Des Moines house of dreams." *Sch Executives M* 51: 207-9, 224 Ja '32

Description of the essential features of construction and equipment of the David W. Smouse Opportunity School, of Des Moines, Iowa, including special features for the deaf, for sight-saving classes, and for crippled children.

3742. Hadley, Hazel and Hathaway, W. "The sight-saving classroom and its equipment." In *Sight-saving classes—their organization and administration*, p. 26-33. Nat Soc for Prevention of Blindness, no. 30, New York, 1929

The selection of room and equipment appropriate to sight-saving classes is discussed.

3743. Hannaford, H. Eldridge. "Where crippled children are taught to lead normal lives." *Nation's Sch* 6:65-8 S '30. plans, il

A description of the building and equipment of the school for crippled children, Cincinnati.

3744. McCarthy, J. C. and Cutts, Norma E. "How New Haven provides for its mentally defective children." *Nation's Sch* 3:43-5 Je '29

A brief description of two school buildings in New Haven, Connecticut, built for subnormal children. The work of the school as related to the building plan is described.

3745. State of New York. *Organization of special classes for subnormal children.* Univ of the State of New York, bul no. 940, Albany, 1930. 9 p.; reviewed in *Educ Res Bul* 10:137 Mr 4 '31

Handbook designed to set up a criterion for the establishment and conduct of special classes for subnormal children. Definite standards are established as to size of classes and classroom equipment.

3746. Studebaker, J. W. "Opportunity school provides for handicapped children of many types." *Sch Life* 14:164-6 My '29

Description of the building and story of the use of the David W. Smouse Opportunity School, Des Moines, Iowa.

3747. Studebaker, J. W. and Merrill, A. W. "The David W. Smouse Opportunity School, Des Moines, Iowa." *Am Sch Bd J* 83:41-6 D '31. plans, il

Plans, illustrations, and description of a special school for cripples, malnutrition cases, heart cases, nervous cases, deaf children, and partially blind children.

3748. Wolk, Louise E. "And now an opportunity school." *Hygeia* 9:1130-1 D '31. il

Describes the David W. Smouse Opportunity School for Handicapped Children, of Des Moines, Iowa. Provision is made for both health and education.

3749. Yardley, R. W. "Building schools for crippled children." *Nation's Sch* 6:55-64 N '30. plans, il

Descriptions of some of Chicago's schools for crippled children.

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VISUAL EDUCATION EQUIPMENT

3750. Bailey, L. C. "Use of visual aids in science teaching." *Kans Teach* 33:19 Ap '31

Discusses the selection of materials, purchase, and arrangement and use of visual aids. Sources of this equipment are suggested.

3751. Brown, H. Emmett. "Visual materials for schoolroom use." *Norm Instr and Prim Plans* 39:54, 78 S '30

A discussion of some visual education equipment.

3752. Finegan, Thomas E. "Equipping classrooms for motion pictures." *Sch Executives M* 49:36-7 S '29. il; also under title "How a classroom should be equipped to show motion pictures." *Am Sch and Univ* 1929-30:280-3. il

Discusses electrical outlet, window shades, motion picture screen, motion picture projector, stand for projector, and library of classroom motion pictures.

3753. Hart, Chester. "Classroom equipment for motion picture projection." *Nation's Sch* 8:98, 100 O '31. il

Discusses projection machines, screens, loud speakers, and film storage.

3754. Hollinger, John A. "The administration of visual aids in education." *Am Sch and Univ* 1932-33:210-14. il

Contains suggestions on the administration of visual education, sets up space and equipment requirements, and lists the essential projection equipment for any building.

3755. *Journal of Chemical Education.* "Minimum equipment for visual education in secondary schools." *J Chem Educ* 7:1841-8 Je '30

Report of the Committee of the Division of Chemical Education of the American Chemical Society. Discusses projection apparatus for still and motion pictures, projection screens, electrical outlets, room-darkening devices, projector stands, and library and storage facilities.

3756. Knowlton, Daniel C. "Equipping for visual education." *Jr-Sr H Sch Clearing House* 4:198-202 D '29

A discussion of the need for real visual education, its cost, equipment necessary, and effective use.

3757. Osburn, D. F. "Use of visual aids in teaching general science by a contract method." *Calif Q Sec Educ* 7:14-18 O '31

Discusses the equipment needed for the contract method of teaching general science.

3758. *Pennsylvania School Journal.* "Visual aids in the field of health and physical education." *Pa Sch J* 79:373-4 Ja '31

Lists some visual aids for teaching health and physical education, and gives some of the sources of this material.

3759. Stewart, C. "Vitalizing the teaching of science through photography." *Wis J Educ* 63:440-1 My '31. il

3760. Taft, Robert. "Increasing the usefulness of the short focus projection lantern." *J Chem Educ* 6:1638-43 O '29. plans

Illustrates several ways in which the classroom may be fitted to present properly a series of lantern slides in connection with a lecture.

3761. Walters, O. S. "Projected visual aids in science teaching." *Kans Teach* 33:16 S '31

Discussion of the value of slides and films in education. Best types of this kind of equipment are suggested.

Index of Authors

THE following index includes authors of references listed in one or more of the three parts of the bibliography. References 1 to 2263 are found in Part I, 2264 to 3761 in Part II, and 3762 to 4613 in Part III.

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Investigation of Nursing as a Professional Opportunity for Girls. Part I, Technical Study; Part II, Vocational Information Bulletin. By Florence E. Blazier. Vol. I, No. 2, 1924. 69 p.

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